

Authentic

SCIENCE FICTION MONTHLY

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ONE SHILLING and SIXPENCE

Authentic

SCIENCE FICTION MONTHLY

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H.J. CAMPBELL

Writes...

This is one of those months when I don't tell you much about the contents, because I've got something more important to say. I'll just mention that this month sees the first part of our new art-paper supplement, which I hope you will like; and that we have the first winner in our readers' story competition. Peter Rigby gets six bound books as his prize. Why don't you have a go?

Now, what I really want to talk about is our poll. Unlike us, we are last in the field with this, for our major rivals have already held theirs. But in a sense we are still *first* in the field—ours is the only poll which is entirely concerned with improving a magazine.

You see, I don't really care how old you are, what you do for a living, whether you are married, what side you sleep on, and whether you are able to roller skate. All that matters to me is what you think of *Authentic* and how you think it could be improved. I am not trying to find out the general characteristics of fandom. I am not interested in what is your favourite magazine. I am not concerned with what age-group reads *Authentic*. To hell with abstracts! Let's have something more concrete than mere numbers!

On page 143 you will find twenty-five suggestions for improving this magazine. You tick them if you agree with

them; leave them alone if you don't.

WAIT!

Now don't rush off and start ticking away like mad things! We've survived four years of publication without a poll, so we might as well take our time over this. You see, the usefulness of a poll is fundamentally dependent, not upon figures, *but upon the truth of your answers*. So sit down and really think about it before you begin to tick. That way you will be less likely to make snap decisions.

And remember—the future policy and design of this magazine will vary according to your wishes. It is in your power to help make *Authentic* nearer to your heart's desire. That is why, in all honesty and sincerity—apart from the homely friendship between us—you MUST take part in this poll. Dash it all, it only costs three-ha'pence!

My thanks go out to you in anticipation. You are going to make my job a lot easier.

Now I'll tell you all about our cover.

(By the way—Happy New Year!)

H.J.C.

THIS MONTH'S COVER

The Sun is far behind. Earth is something we have to look for carefully with telescopes. Home might be a dream we once had. We can't be sure. All we can be sure of is the cold and the isolation and the grandeur.

We are on one of Saturn's moons and the great planet lies, seemingly still, in the black sky with its fabulous rings that send back to us sunlight that we know is falling, too, on the rich fields of our native planet. Here there are no fields. Only rock. And ice so hard that it just doesn't pay to melt it; it needs too much power.

No air to breathe so we wear spacesuits and hate the stuffiness of them and the tight, cramping feeling you get after several hours in them. Then we go back to the domes.

Under the domes there is air—of a sort. Churned out by machines, smelling of electricity, slightly metallic. But it's all we've got. That and the sloppy green mass that comes from the hydroponic plants for food. As you eat it for the hundred thousandth time you get a vision of a juicy steak, brown and inviting, with crisp fried onions and blackening tomatoes—and you wonder why you are here.

You turn your head and through the plastic dome you see the answer. The unbelievable beauty of Saturn. The overwhelming vastness of the distances you have travelled. The indescribable unity of space and time and thought that you are just beginning to understand, and which makes you feel just a little like a god.

Until, after a while, after staring at the magnificence in the sky, your wonder changes. You begin to wonder how people can stay on Earth.

So you turn back to your sludge-pot of green algal mash and realise that life is good, after all.

When you try to turn a team
into an individual you must remember
that there is no teamwork—

Without Love

by RICK STRAUSS

AN ad-car went yodelling by. Something about the fights in the Central Arena, fights, bloody fights, tonight. In that same arena I nearly helped kill the man who might have been my son.

Yes, the New Men were barbarians all right, Roman style—*panem et circenses*, bread and games—but barbarians still. They had formed an adaptive, highly regulated society based on the achievements of the Old Men. Ah, well, in another generation or so there'd be nobody around to know they were barbarians. They'd be the norm.

Then I shook my head. Wrong, I told myself, doubly wrong. They *are* the norm, even now, and you, you're just a fusty old relic of an unenlightened past.

But I couldn't forget what the New Men had done to me and my friends and some day, I swore an oath, I would get even with them. Bah, futile dreams! I pinched myself deliberately to get my mind off a bitter subject.

I was standing in front of a music store and I went in to ask whether they had the third record of Stragaski's *Concerto in A Minor*, which I had somehow lost. Stra-

gaski was the last set of records I bought, some five or six years ago. I don't go for the intra-tonal music that the New Men find so fashionable, and so I was a little doubtful whether the record would be in stock.

The clerk at the desk said he'd take a look and turned to the automatic file. While he was searching, another customer came in, a girl, beautifully built, like all the New Men. Silver-blond hair an understatement in colour that matched the superb understatement of her curves.

If I hadn't been such an old man . . . But wait a minute. I was old, yes, my sixty to her twenty. The difference lay in years but not in vitality. I was in the middle of my life-span, having all reasons to expect to live another seventy years more, thanks to my friend, Kornhoffer, the great radio-geneticist. I had been one of the few Old Men to whom he had deigned to give his gift of long life. Sometimes I wondered whether it was really a

gift, or whether it was a curse.

Curse or gift, I'd use it to show the New Men . . .

The clerk informed me that they had the record in stock and punched the button beside the file. The record popped up through a slot in the counter, a standard 18 disc, price twenty-five penko. Or was it?

"Listen," I said, "is that a twenty-five penko record?"

"Yes," said the clerk, "that is a twenty-five penko record."

The blonde girl smiled.

I looked at the pale blue disc. It seemed thinner than usual and the rills were more widely spaced.

"Are you sure?"

"He is sure." The manager had come up, a New Man. Even as he spoke a note of condescension crept into his tone; he had recognised me as one of the Old Men. The clerk, an Old Man himself, faded out of the picture.

Bluntly, I said: "Well, he's wrong."

And then the record suddenly warped where my fin-

gers held it. I threw it back on the counter.

The manager smiled sweetly, ever so sweetly, pressed the disc against a flat surface and rubbed it with his palm. The warp vanished. "Would you like to take your doubts to court?"

"No!"

A litigious people these New Men. If there's any doubt about anything, anywhere, go to court with it. If no law or precedent can be found, there will be one. Soon.

I didn't want to go to court and be made to look foolish, but . . . The memory of Mattis, who might have been my son, still irked me and I wanted desperately to prove myself the equal, if not the better, of a New Man, to humiliate, to out-bluff one. Also it did not *look* like a twenty-five penko record, and I ought to know.

It was some thirty years ago, I think, when they were trying to standardize world

currency. Our Team had been assigned to the project and I was sitting in conference with a batch of financial experts. For one whole day they had been trying to smooth out the difference between the French and the Belgian franc. I was sick of their bumbling attempts at compromise.

I left the room and asked Exchange to locate Harty, a friend of mine, a mathematician on one of the Statistics Teams. They found him and his gang in the bar of the *Colonial* and I vised him to stay put, that I was coming over.

"What's today's headache?" he asked, after he had introduced me around.

"Those blockheads of mine are compromising again and we're getting nowhere. I'll have to cut straight through. Give me a good world-wide standard for currency."

"Man hours," suggested someone.

"No good," I said. "No two men work alike and you can't export time."

"Man-hour product?"

"What product?" Harty looked at me.

I thought for a moment. When you have to be arbitrary you might as well go for broke. I was a record-fiend. I said: "A standard 18 record."

"Why not?"

"All right, then, break it down." I retired into a highball.

And they went to work on the problem as only a Team can. For a while the air was thick with medians, log x's and y's, averages, and potentials, but after barely ten minutes they informed me that one hour of standard semi-skilled mechanical work should equal four standard 18 records, with a tolerance of 1/16 record plus or minus.

When I got back to my financiers they were in an uproar; somebody had introduced the problem of the Swiss franc. I told them to shut up and listen.

I played them a recording of my conversation with the

Statistics Team. (These recordings were made of all such conferences on the pocket 'corders which we Teamsters carried for just that purpose.) Then I said: "Your basic unit is the 'valt,' representing four standard 18 records per hour. The 'valt' will be divided into 100 'penko.' Adjust your currencies accordingly and get through by the end of the week. S'long."

With that, I left them. The rest of their work was purely routine, for I had gotten them over the hump by eliminating all possibilities for compromise. Why had I chosen "valt" and "penko"? Because they were arbitrary symbols for arbitrary values. They had no national or traditional associations and so nobody would feel slighted. "Valt" and "penko" would be standard world currency from now on.

Such was the power of the Teams in the days before the New Men.

But to get back to the music store and the third

record of Stragaski's *Concerto in A minor*. Having no intention of getting myself humiliated by a New Man's tolerance and condescension, I took the record and put it on my pocket 'corder for a trial spin.

At that the other customer, the blonde, got a gleam in her eye.

"Say, you aren't a Teamster, are you?"

I nodded. I was busy listening to Stragaski.

The girl moved away from the counter and looked at me in wonder and admiration, the wonder of a barbarian confronted with something new.

Or something very old. She had recognised the pocket 'corder as one of the Teamster models. They are no longer manufactured. It gave my identity as a Teamster away, as a result of which the blonde forgot to condescend and began to look up to me as a legendary hero, a demigod almost. She squinted her eyes and said: "Say, haven't I

seen you somewhere? At the Palace?"

"Not that I know of." There are many good-looking blondes at the Palace. At that, she did look familiar.

She wouldn't let go, she had found a new toy. "I'm sure I have seen you. You live there, don't you?"

"Yes." I was actually researcher-in-chief to her Highness, the Dianotrix—the Empress of the World, as she would have been called once.

"Well, maybe you haven't noticed me. I only arrived two weeks ago. But I certainly noticed you; you had your uniform on. You're Teamster Alcott. My name is Celeste."

"How do you do."

"I beg your pardon, sir." The manager had suddenly become deferential, in fact too differentially so. "Will you accept this record as a gift?"

That riled me again. These condescending barbarians. Where would they be without us? I'll admit their superiority in their line; that's why we

Teamsters, the Old Men, had created and bred them. But when they turn on the condescension and the tolerance I get mad. I'm a New Man, too, honorary, as a reward for my services. I'm a citizen of their world with all the rights and privileges thereto pertaining, but in their eyes I'm only a second class citizen.

I took the manager aside and told him exactly what to do with his record, and in particular where to stick it. I must have raised my voice some for Celeste was grinning broadly when I came back. She said: "May I have the honour of your escort back to the Palace?"

Surface formality, typical of the New Man. I had half a mind to tell her off also, but then I reconsidered. It wouldn't get me anywhere, this running around like a bear with his tail in a trap. Formality and condescension, sure, the mask of a person as yet unaccustomed to his power and position; a child's formality, masking uncertainty

and avid interest and a desire to do the right thing. A new toy pre-occupied them immediately and completely, until they grew tired. But first they played with it, without fear or regard for the toy's desires.

Celeste wanted to play with me. Celeste was young and beautiful. Celeste was a New Man, Woman, rather. I had a couple of scores to even with the New Men/Women.

I bowed.

"I'd be delighted, fair lady."
Formality.

Women, Old or New, are alike in the make-up of their characters. Celeste was inquisitive. So I was a Teamster, huh? Had I been in many fights?

"You're thinking of Combat Teams," I said. "I was in an H.E. Team, human engineering."

"Oh!" On a descending scale.

"But, it was our Team which created the first New Man."

"Oh-h-h!"

Now she wanted to hear everything, so I told her. A handsome creature, she snuggled up to me and gave me her full attention. It flattered me, I guess. The copter that took us out to the Palace suburb was a public one, and Celeste got many admiring glances. I talked to her, looking into her dark brown eyes, and I sort of forgot that I was talking to her, and I may have rambled some, as men are likely to do when they talk about their youth. Celeste didn't mind; as a New Man she had the brain to integrate haphazard information as soon as it was presented. That, incidentally, was one of the reasons for the creation of the New Men.

Team 135 H.E. Its five members knew everything that there was to know about human engineering. Highly trained, experienced, tough. Fighters every one of us. We had to be. Cleaning up after defunct dictators and stale-

mated parliaments, first by nation, then by union, then on a worldwide basis. No job for softies; some people objected to having their noses wiped for them. As for *our* nationality, who knew and who cared? The Teams were above nationality, working under direct commission from the Central Union.

Team 135, my home, my family, my love, Team 135 H.E. Two letters and a number, and Max, Fermin, Tiger, myself and Menilissa. And Menilissa . . .

Tiger was our muscleman and electronic expert. About six foot, heavy, bull-necked, with short black hair. He once said that he'd been born among the shops at Liverpool and that may have accounted for his wizardry in electronics.

Sure, the rest of us also had a working knowledge of that field. Any one of us could figure out the input, output and rating of a torkle-coil, given a pair of calipers, a table of logarithms, and a couple of hours. Tiger, he'd just frown

at the coil for a second and then he *knew*. That was intuition, and intuition provided the basis for the Teams.

Fermin, lank and swarthy, was our psychologist. He, too, worked by intuition. Talked with a man for a minute and he could tell what kind of dreams he'd be liable to have.

Then there was Max, officially our commander, though that didn't count for much. His forte was to indicate the direction in which to head, and to apply our findings, pronto. I'll head a car through a brick wall after I've looked around for a while and calculated the risks. Max would just have stepped on the gas; he'd have known the risks. He stood about six foot three, blond, rangy, narrow-skulled, of high nervous tension.

Then there was Menilissa, our biologist.

And myself, Alcott, logician, researcher, contact man. Sturdy, reliable, grey. Even then. Grey with the dust of too many books. I'm more

grey now; it is quite a strain to have to assert yourself constantly, which is what counts with the New Men. That is why there are so few of us Teamsters still around; so many got themselves killed trying to keep up with the New Men. For the New Men are nothing but a whole Team rolled into one individual.

The Teams were combinations of individuals of great gifts and intuitive knowledge along one specific line and of an over-all knowledge in allied fields. Thus one Team would know all about, say, human engineering, and their reference man, such as myself, would provide the connection with other Teams. In this manner Old Man overcame the effects of the necessary specialization as science branched and rebranched. New Man on the other hand had an intuitive knowledge about a whole field of allied sciences, that and a sense of integration as instantaneous as, for instance colour perception.

This may serve as an illus-

tration. Old Man, whose automobiles moved generally at an upper limit of sixty-five miles per hour, could expect one fatal traffic accident per day per 250,000 inhabitants of a given area. New Man seldom drives at less than one hundred and thirty miles, even through city traffic. Still there is only one fatal accident per day per 2,500,000 inhabitants. And that is due mainly to mechanical failures. In other words, if New Man hadn't come along, Old Man would have committed mass suicide as life speeded up. Now he just lived out his lifespan in peace, providing the clerks, the servants, the large basis, quasi-slave labour, that is necessary to maintain the aristocratic leisure class—in Veblen's sense—of the New Men.

The copter had coasted to an imperceptible stop and Celeste and I got out. We walked along the approach, shaded by sixty-foot geranium trees, toward the huge cross-

shaped skyscraper that glittered in the afternoon sun from thousands of windows. So tall that it *actually* scraped the clouds, it contained thousands upon thousands of halls, apartments large and small, offices, auditoriums, stores, shops; it was the suburb, it was the Palace.

"Would you care to come to my rooms for a drink?" asked Celeste.

I nodded. I had expected this.

Her duplex in the west sector, 253 floors up, gave no indication of her status at the court of the Dianotrix. I was not curious; she'd tell me when she felt like it. She made me at home in a large chair, gave me the promised drink, and disappeared to change into a house dress. I felt a little hot around the collar.

I still can't stomach the New Men's promiscuity. Not that they live in sin, as it once would have been called, far from it. Nor that they are decadent or depraved. It is

their attitude that the body is merely a physical adjunct to the mind and as such of rather low value. This attitude is derived from their experiences in the conquest of the lands of time, and my logic tells me that I should agree with them. However, I still regard the Team or the family as the sexual unit, whereas now it is the time-sector.

Celeste came back in some close-fitting gown that hinted. After a period of comparative nudity the New Men realised that secrecy and concealment is vital to the arousing of interest. Celeste perched on the arm of my chair and said: "Didn't you mention that your team had a hand in inventing us, the New Men?"

"That I did."

"Tell me."

Just like that. A command. I would have liked to paddle her bottom. Barbarians.

I HAD TO REACH FAR BACK this time, more than forty years, to the first mission of

Team 135. We were youngsters then. Even Max, our commander had only just turned twenty-one, the legal age for his rank. I was eighteen, Tiger half a year older, Fermin twenty, and Menilissa nineteen. A bunch of kids you would have said then, though mentally and physically as mature as ten years of intensive training could make us—they started to form the selected children into teams at the age of eight. We were returning from our first mission, which had been to El Azhar University in Cairo, where a schism had threatened to split the world of Islam into warring factions.

Fermin had talked with the heads of the contending factions for one hour each. Later he said that in every case fifty minutes had been merely politeness. Then he told Tiger what was wrong and Tiger spent three minutes adjusting the main torkle-coil in the administration building. After that the split, which had loomed as large as the abyss

of ages, shrank to a hair's width.

We were on our way home. Max had set the auto-pilot for our base in New Mexico and we were sitting around in the community cabin of our plane, passing the time. Our own torkle coil glowed merrily in its grid as we communicated with each other. After a while Tiger got bored and went to his cabin to get one of the detective stories he devoured with unflagging passion. When he returned, he stopped and spat at the torkle coil and laughed. The rest of us laughed, too.

The coil, hit by the spittle, reacted almost like a man. First it grew pink, then red, then purple, then fiery concentric rings closed in on the offended part, formed a sort of a mouth and spat right back at Tiger. If it hadn't been for the ductoprene grid that surrounded the coil like a cage, Tiger would have been splattered, but not by spittle. The ductoprene, a metallic-fluor nitrogen polymer of

benzoid structure, captures and drains off the output of the coil above a certain non-harmful maximum.

Well, Tiger laughed, but a sudden flash of thought crossed his face. He spat again, this time in dead earnest, and he didn't laugh when the coil tried to spit back. He watched it carefully, and so did the rest of us, for the coil had, as usual, transmitted the thought. But even while transmitting, the coil did not forget to spit back at Tiger, and of that we felt nothing. The colour of the coil had changed; it contained a tinge of black around the quick-forming mouth, a tinge of black that about matched Tiger's seriousness.

Max said to me: "What does the reaction look like when *you* tease it?"

We were young enough to enjoy this silly game. I myself had often flicked paper clips at the coil and grinned as it tried to get back at me. But Tiger was the only one who

ever spat at it. Now this may sound a bit snobbish, but Tiger did have a vulgar streak in him. Heredity, I suppose. I, coming from middle-class parents, was inclined to look down on him even though the whole team had been integrated as to personality. Tiger retaliated by being overly assertive with me, and I on the other hand took a similar attitude toward Max, who may have looked down on me. This does not mean, however, that I didn't worship Max with all my heart, nor were there ever any overt demonstrations on his or Tiger's part. Still the idea was present.

So, when Max asked me what the coil's reactions were when I teased it, I rebelled at first at the thought of having something in common with Tiger. After I got over being rebellious, I answered: "When I throw a paper-clip, the reaction does resemble the force field of a paper-clip."

Fermin nodded. "And the colour change equalled the

change of intention from teasing to insult."

"But you didn't feel any reaction," said Tiger. "The emission was above the safety zone; the grid shielded it."

Max said: "You yourself didn't feel it, either."

"But the colour change indicated that it was there."

"In other words," I drew the conclusion, "the coil duplicates and transmits stimuli as well as thoughts, and it does so whether the receiver is conscious or unconscious. If, therefore, the brain-patterns of an unconscious receiver were as yet uncrystallized, as with an embryo, it might be possible to alter them permanently. Or one might impose a number of patterns and thus heighten the range of intuition. It's worth a try, I'd say." And I looked questioningly at Max.

Tiger said: "The grid shields and modulates the emission. At the same time it spreads it. We got to open the grid, put in a lens, so we can focus the emission and also stop it

down." He went to his work bench.

Max got up and came over to where Menilissa and I were sitting. He put his hand on her shoulder.

"Are you willing?"

She smiled up at him and patted his hand. "Biologically speaking it is the right time."

Menilissa. Each of us loved her and she had given herself to each of us.

Why not?

Polyandry and matriarchy had been the custom in the Mediterranean basin long before the Aryans thought of leaving their native steppes in Central Asia. They used to say that cold iron banishes evil spirits; what they meant was that the Triple Goddess lost her supremacy when iron swords invaded her lands, which was at the beginning of written history. Yet even after that woman remained the power behind the throne. Even so it was now.

Menilissa, having all our love, had also all our respect.

Had it not been for her years we would have had her as our commander instead of Max. As it was, the four of us revolved around her like planets around a gentle sun. We had been so closely integrated since early youth and the balance was so delicate that incursion of affection from outside the team would have upset it. Menilissa had enough love for us all. She was the mother of the Team.

And she was with child by one of us. We had tried to find out who the father might be, but that seemed as yet impossible. Fermin had taken psychometric tests of the embryo and announced that it showed an inclination for intuition in the field of personality projection—actor, statesman, general—a quality none of us possessed. This was not surprising, since intuitional traits are generally recessive, but it handicapped us in the discovery of the father, for none of us knew our parents well enough, having been separated from

them too early. A blood test likewise proved inconclusive, except that it eliminated Fermin.

Personally, I would have preferred to see Tiger eliminated. However, I still laugh when I think of poor Fermin's face when he found himself scratched from the race. As for Max, Tiger and myself, we were as proud as Punch, each secretly patting himself on the back. We united in guarding Menilissa and waiting on her hand and foot. And now Max was asking her to risk herself and the child.

Menilissa was tall, strongly built, with ash blonde hair and slightly Slavic features. She ruled us boys with a firm, motherly, tender hand, and she could read our thoughts even without the torkle coil.

She knew at this moment that Max had already intuitively calculated the risks and had found the experiment to be safely permissible. Still, he had left the decision up to her because he loved her. She looked at each of us in turn

as we sat there. And we sat there, taut or relaxed as our conscious mind dictated, but inwardly as tense as a full-bellied sail. She nodded.

"I'll risk it."

Tiger had fitted the lens into the grid at waist height. Consisting of concentric circles of magnetic fields, now closed, it seemed to be a black pinpoint at a nexus of grid lines. Menilissa stood before it, her broad face calm and composed. The rest of us sat there, opening our minds to the coil, sending wave on wave of each particular intuitive force, and above all sending an unending stream of love for Menilissa. We were trying to impregnate the mind of the as yet unborn, unconscious child with the combined integers of our Team.

Tiger looked at Max and Max nodded. The lens opened.

The baby—we called it Mattis—looked no different from any other baby. But it began to speak as soon as it

had learned to control its breath, and the moment it could crawl it knew where it was going. After five months the other Teamsters provided it with thousands of like-minded companions. Kornhoffer, the radio-geneticist, went to work on them, trying to stabilize the traits by addition of genes, additions which would make these new traits hereditary. Kornhoffer, working his way down the Greek alphabet, picked on the Mu-rays, and they proved to be effective.

This was unfortunate, in a way, for the Old Men hearing about their effect thought that "Mu" was short for "mutation," which was naturally not the case. This error did much harm though, for the Old Men thought of the New Men as mutations and regarded them with hatred and suspicion. Small wonder that the New Men today retaliate with arrogance.

The hatred of today's New Men is, however, reserved for the first generation New Men,

such as Mattis. In that first generation the new-found power could not be sufficiently kept under control and its owners committed regrettable excesses. But New Men mature fast. Generations followed each other at eleven year intervals. It was then in the second generation that the full force of the change made itself felt, when the genes had duplicated through in-breeding. In the third generation the process had become stable; no more duplication had taken place, excessive genes having cancelled each other out.

The Old Men were too primitively different to disturb the New Men's, as yet unstable, self-assurance. The first generation, however, was too closely resemblant for comfort, almost caricatures you might say. Hence the hatred of them.

I'm getting ahead of myself.

When the first of the New Men began to throng their specially equipped kindergartens, the Teamsters realised

that they were only holding down the fort until the new owners should mature. As a result they worked twice as hard to have everything ship-shape and so uphold the honour of the Old Men. They could have spared themselves the trouble.

The problems of the Old Men never even entered the consciousness of the New. But the Teamsters did not foresee that, and so they died in droves as they took greater and greater risks, extending their intuitive faculties beyond their farthest limits. Max and Menilissa may have died in that period. I say "may," for they disappeared, and markers with their names were erected in the 135 H.E. plot of the Teamsters' cemetery at Rosemont.

Then the New Men began to take over, and more Teamsters risked and lost their lives trying to keep up with them. Fermin was in that group. This I know for sure. I found him. He, too, lies at Rosemont. Tiger disappeared,

and for some reason was never listed as dead. Mattis disappeared, also, but him, the third generation New Men might have killed. I, a lonely grey man, having neither much dash nor much imagination, a book worm, I received the honours which the New Men saw fit to bestow on me as the last survivor of what they called the "Father Team." I became an honorary New Man.

Yes, they had use for me and a couple of other survivors like myself. The wise men, the scientists of one culture, become the witch doctors of the succeeding one. They treated us Teamsters with respect and drew upon our knowledge of old things. But don't think that we didn't pay for our position. We paid for it with shame and humiliation. They used us and then ignored us when we had given them what we had to give. It was Greece and Rome all over again. Greece had some knowledge, but Rome had

the power and the law. The Romans were masters. It is hard to serve a proud master.

My post as chief research man to the Dianotrix of the Central Union, yes, the Empress of the World, as I have called her, it was a sinecure. The Dianotrix was young, second generation, barely twenty-five. There were many books that she didn't have the time to read. I had read them, and I gave her and her government the information they required.

Alisoun was the name of the Dianotrix; Ferroman the name of her co-ruler, the Dianotor. They were not married, of course; they had merely gone to the top together, and she quite eclipsed him. A small, stately creature with creamy golden skin, purple-black hair and golden, almost yellow eyes. Her Teamster grandfather had been a Polynesian. She was a deep water, yet quick-running and sparkling. Her favourite pastime was to invent and watch new games and sports. I was

called in consultation on many occasions to provide some new slant.

I used to dig deep down into primitive lore to get new ideas and one day I came up with a fantasy about a gorilla abducting girls. Her Highness liked the twist and I could tell by the gleam in her eye that she was cooking up something extra fiendish for some poor first-generation New Men who had incurred her displeasure.

No, I shouldn't say "fiendish." If you yourself feel no pain, and value life and body less than a good meal, you cannot conceive that others might think differently. As they said in the days of that grand book the Bible: "What is sacred to the Egyptian is unclean to the Jew. What is sacred to the Jew is unclean to the Egyptian." Ethics and morality is merely a matter of orientation, I know that now. Who was I to criticise the intentions of a race that entered the land of time as freely as I went from room to room? Still, after I had made

that suggestion about the gorilla, I felt very disgusted with myself for pandering to the Dianotrix's whims. I felt in need of some spiritual antiseptic to get the bad taste out of my mind.

Leaving the Palace I took a copter to the Gayne suburb, hoping there to pick up private transport to the Teamster cemetery at Rosemont. I wanted to be near Menilissa, near the place where I hoped to lie some day, where Tiger would wish to be buried if he could be found. The New Men, for various and specific reasons, preferred vast sub-zero storage chambers near the Poles.

When I got to Gayne, however, I found nobody to take me out. It happened to be snowing at Rosemont, though not at Gayne, where, on account of its being populated, the weather was carefully controlled. So I walked about the shops at Gayne, watching the clouds in the west over Rosemont and

thinking of Menilissa. There were a number of workers about, and one of them, in the saddle of an electric tri-cart, looked vaguely familiar. I could only see his back and he was dressed in heavy insulalls, but . . .

"Tiger!" I shouted.

Tiger it proved to be. Older, the mighty shoulders slightly bowed, grey hairs among the short black ones, but still the same Tiger with the light of battle in his eyes. I was truly glad to see him.

He turned slowly on his saddle and said: "Hello, Mr. New Man."

I stopped. "Tiger? What's the matter? I'm Alcott."

"Yeah, I know you." His scornful glance took me in from head to toe. I was wearing the dress of the palace officials, a sort of uniform. "And this is what I think of you."

He spat.

I guessed what was wrong and knew he'd have to get it out of his system before I could talk to him.

"Got a torkle somewhere?"

He understood what I was driving at. Reluctantly he slipped from the saddle and went around to the side of the cart, which he opened. Inside hung racks of spare tubes, condensers, coils, etc. Tiger seemed to be back in his old trade, as electronic expert. He made a few connections and soon a small torkle coil began to heat up and glow.

Then I knew why he had been so bitter. Mattis was wanted by the Central police for slaying one man in hot anger and one in cold determination. And Tiger was wanted too because . . . because Mattis had been *his* son. So Tiger was hiding out here at Gayne, an out-of-the-way suburb, where his electronic intuition enabled him to pass as a skilled mechanic.

I had gone over to the enemy. I had, Tiger let me know via torkle, the moral stability of a lap dog. What should I have done, I countered—kill myself, start a revolt? He did not know the

answer and retracted a few of his insults. Yeah, there wasn't much I could do.

Then he grinned as disappointment flashed through my mind accompanying the thought that Mattis had been Tiger's son. I had not known that up till now, never having seen the child after it had been born. Then events had swirled us apart and now . . .

Tiger said aloud: "Quite a shock, isn't it? You never did care for me very much."

I nodded glumly. "Where's Mattis now?"

"Oh, they've got him."

"And?"

He shrugged. "I'm glad Menilissa isn't around."

"You're right. I came here to see the grave."

He looked steadily into my eyes and then made an adjustment on the torkle. With that the last barrier fell between us as our love for Menilissa flowed back and forth between us like a cleansing stream. Even in death she still managed to make peace between her boys.

And Tiger admitted that he was at Gayne, not only because of its remoteness, but also to be near the cemetery.

"Hop on," he said. "I'll take you out. There's an old subway running in that direction. I go there often."

I climbed into the saddle behind him.

It was cold at Rosemont cemetery; snow drifted slowly and Tiger and I pulled the hoods out of our collars and the mittens out of our cuffs and slipped them on. We drove through the deserted alleys, the three wheels of the cart leaving broad regular tracks in the fresh snow. Between the houselike tombs we drove till we came to the plot and the tomb of Team 135 H.E. and stopped beside the water-streaked, yellowish cement wall.

The tomb had a window about five feet up, deeply recessed, with an iron grill across it. A wisteria had climbed up the wall and hung from the grill, dry and brown, nodding with the fall of snow.

We sat in silence, then Tiger got off, opened the cart, switched on the torkle. He went to the grill and twisted the combination of the lock.

It had long been the custom to make recordings of the most personal essence of those who had died, and these records were kept behind the grill, the combination of which was only known to the friends and relations of the departed. They could be opened and the recordings could be played on the torkle coils which were available at the gate house.

But we had no need to go there. We had our own equipment, and so we sat there in the drifting snow and let the spirit, the essence, of Menilissa join us once more in a deeply satisfying communion.

Our breath hung misty in the still cold air. The snow flakes fell. One of them drifted against the heated coil, which sputtered.

Tiger said: "It's a little out of whack. I held it against a spy-phone one day and gave

somebody on the other end a bad headache."

Then I had a hunch, an intuition of death. "Tiger! We've got to get back to the city at once, to the Arena."

I picked up the recording of Menilissa, a small standard 6 disc, and stuck it in my pocket. We turned around and headed back, leaving the open grill swinging behind us.

We were not disguised. Tiger in his insul-alls looked like any other mechanic and I was still wearing the uniform which designated me as a high official at court. The urgency of the situation made it no effort to be just as overbearing as any New Man, as any ordinary fight fan.

The New Men were avid fans. They went to the Arena, of which there was one in every large city, not only because of their Roman love of cruelty, but also to rid themselves vicariously of their barbaric impulses. That, at any rate, was my theory, that the fights provided the cathar-

sis for the emotional instability of the New Men.

It was also a convenient way to get rid of such individuals as would not conform to the set standards of society. And it made no difference whether they were Old Men, or first, or second generation New Men.

The fight manager at the Arena seemed properly impressed by our bearing. "But," he shrugged, "the games were arranged by Her Highness personally, and it would mean my neck if I made any substitutions."

Even a carefully tendered bribe of five hundred valt could not change his mind. We were not even able to see the participants, which were kept under close guard. Her Highness' orders.

"But, I beg your pardon, sir, aren't you Teamster Alcott?"

"Yes."

"In that case Her Highness has left special instructions to conduct you and your com-

panion to reserved seats in Her Highness' personal box."

I looked at Tiger, he looked at me. Now I knew what was going on. The Dianotrix had foreseen my reactions after the suggestion concerning the gorilla. She had known I would go out to Gayne, where I would meet Tiger. He had not been hiding, as he thought; he had been allowed to stay there. The Dianotrix had also foreseen that I would detect her scheme and had instructed the fight manager accordingly. And now Tiger and I were going to sit in her box where she could watch us squirm.

It was not cruelty on her part; she probably did not think about my feelings at all; she merely intended to get an extra kick out of the games. And Tiger and I were too helpless to do anything but provide it. As a matter of fact, Her Highness Alisoun, Dianotrix of the Central Union, was most gracious when she entered the box. She congratulated me sincerely and charmingly on my

superb idea. "I am pleased to see you here. It shows that, at last, you are beginning to assert yourself in a manner becoming a New Man."

The games began.

WE SAT IN THE GLASS-ENCLOSED box, in full view of the crowd who had come to see the games. The glass was shatter-proof and airtight. Sometimes the Arena was flooded and the games took place under water, shark hunts and so on. A system of loudspeakers connected our box with the other boxes and with the Arena itself.

It had lately become fashionable with the gilded youth of the New Men to take an active part in the games. The two hundred odd girls who trooped out onto the pale green sand were, therefore, greeted with applause but not with astonishment. The girls acknowledged their reception and then proceeded to stage a delightful dance right below our box.

They made a colourful picture, being dressed in flimsy rainbow-hued garments that swirled about them, now revealing, now concealing slim arms and legs. But I noticed with consternation that they were armed. Each carried a dagger with a triangular one-inch blade, a weapon that would hurt and maim but not kill, except by an accidental lucky thrust.

At the end of the dance the girls gathered in a loose group, about twenty-five wide and eight deep, in the middle of the Arena. A door opened at the far end and from it emerged a string of tall shaggy creatures, twenty in all. I focused a handy glass on them and discovered that they were men—men dressed from head to foot in synthetic reddish brown fur, their faces covered with hideous masks. They were supposed to be gorillas.

Yes, the Dianotrix had taken my suggestion. It is painful to a proud race when it finds itself aped by a lower

one. That was the reason why the second and third generation of the New Men so hated the first. Now the Dianotrix had knocked the accent off the "aping," by heightening the difference, by making "apes" out of the first generation. Now they could safely laugh without fear of laughing at themselves.

According to the printed programme the "gorillas" were supposed to charge the girls and attempt to carry them off. The girls were to defend themselves with their short daggers. But a hitch occurred. Instead of charging, the "gorillas" gathered in a huddle on their side of the Arena. When they emerged they assumed a rigid formation. First came one man, then at close intervals behind him two, then three, then four. Behind this first group, still closely packed, came the rest in a column of twos. The effect was that of a broad blunt spear with a short sturdy haft. The plan was evidently to charge the

group of girls in a compact body instead of singly.

The girls naturally guessed the intention and took counter measures. They in turn formed a sort of half moon, hoping to receive the head of the spear in the middle of the cup and then close in from both sides with the horns of the moon. The buzz from the other boxes quieted down as the opponents went into their formations, and all that could be heard were the high clear voices of the girls and the short grunt that signalled the attack of the "gorillas." The Dianotrix turned around and gave me a sharp look.

The spear hurled itself, point foremost, at the girls, but instead of heading for the middle it aimed a little to the left of centre. The two forces met and the horns of the moon curved inward. At that moment, however, the haft of the spear detached itself, flanked to the left and circled at full speed around that end of the moon. At its head ran a gigantic, broad shouldered

creature, evidently their leader.

The head of the spear had penetrated the front line of the girls and stuck. The "gorillas" in it were putting up a good fight, battling the girls back to back. And while these still milled about them, the second group completed its end run and struck from the rear. Using a variety of rabbit punches they cut a broad swath through the confused women until they met up with the first group. The force of the girls had been bisected.

The "gorillas" had adapted for their own use the Carthaginian tactics at Cannae, where Hannibal had, in a similar manner, defeated and routed a large Roman army. And as the Romans were demoralised in their day, so the girls were now. The two bodies of "gorillas" had met, they joined, flanked and waded mercilessly through the left wing of the girls' forces, which was already the smaller.

Two or three gorillas fought a rear-guard action, guarding

the backs of their brethren against the girls' right wing and middle. These, however, were too disconcerted to make any decisive attack. In single combat the "gorillas" were more than a match for the girls; nevertheless, two or three of them went down when six or seven of the dagger-wielding Amazons ganged up on them.

Even this did little to stave off the final rout of the girls. The left wing got their fill of being beaten up and turned to flee, and the right wing joined them. Gates in the sides of the Arena opened to let them out. But behind the "gorillas" other gates opened. And as a shout rocked the arena, hailing the victory of the underdogs, a group of guards entered at the double. They fired into the "gorillas" and five went down before the bullets of the sub-machine guns.

Then an officer shouted a command and the firing stopped. There was danger of hitting the bodies of the

twenty or so girls who sprawled all over the sand among dirty brown pools. From the first the "gorillas" had not resisted the guards; now they allowed themselves to be led away while the crowd still applauded. The Dianotrix spoke briefly into a microphone and commanded the leaders of the "gorillas" to be brought up to her box.

When the guards brought the leaders up, there was one giant creature among them and also one shorter, broad-shouldered fellow who seemed to have more authority. They were both bleeding from numerous small wounds, and the mask of the shorter one had been half torn from his face. At a sign from the Dianotrix the guards snatched away the other half. It was a shock but no surprise to see a face in which the features of Tiger mingled with those of Menilissa. It was the face of Mattis, Tiger's son.

He stood there facing with a scowl the dainty Alisoun,

who reclined negligently in her chair. Tiger and I were on our feet, leaning tensely forward. Mattis stood, his arms hanging loose, his shoulders relaxed, but in his dark eyes flickered something wild, nearly irrational.

Tiger, beside me, held his breath for a long time and then let it out slowly so that it whistled between his teeth. I put a hand on his forearm.

"Don't do anything foolish."

He shook me off with a grunt.

The Dianotrix was saying: "Well fought, my friend, well fought." She looked at Mattis with candid eyes. "A victor over two hundred women."

The words trickled away in the soundproof box. The speakers from the Arena had been turned off, and the attendants who were still busy removing the wounded girls moved in submarine silence beyond the glass.

Mattis said: "I am honoured to have pleased Your Highness

by fighting well. Shall I be rewarded?"

"What with?"

"Freedom, as is customary."

The Dianotrix drew her lips back over her teeth. "Freedom to commit more crimes against the law?"

"If it please you, Highness," I interrupted, "the law holds first generation New Men to be incompetent."

"That is the law," echoed Tiger. "First generation New Men are morally not responsible."

She did not relax her smile. "Are you trying to teach me the law?"

"Oh no, Your Highness, we were just . . ."

"Are you aware that this . . ." she hesitated, "this man is a double murderer?"

Tiger stepped forward despite my warning hand. "Your Highness, one of the men he is supposed to have murdered attacked him first, and the other he killed in self defence."

"I also believe in self defence, preventative to be sure." The Dianotrix mo-

tioned to the guards. "Get rid of them."

Tiger protested once more. "But Mattis is innocent. He's harmless."

"Harmless, eh?" She waved a hand at the Arena, which now lay empty. Then she smiled again, directly at Mattis. "So he's harmless? Well, all right, let him prove it."

"Yes?"

"Let him," and the smile deepened, "let him spend the night at the Palace. With me. And take the other one to the gas chambers."

There was no malice in the Dianotrix. She was playful, but not malicious. The will-o'-the-wisp light in Mattis's eyes flickered dangerously, yet he restrained himself. The other, the giant, however, hearing that he was to die, sprang forward with grappling hands. The bullets of the submachine guns ricocheted off the shatter-proof glass.

Said the Dianotrix as the guards were lugging out the fur-clad body: "I always wondered whether the first genera-

tion were men or beasts." And she smiled encouragingly at Tiger and Mattis, who stood silent in the hands of the guards. "Don't worry, you'll get your chance to prove it. Take them away to the Palace now and put them under guard. And you, Teamster Alcott, come with me."

She looked quite surprised when I bowed with strained formality and said: "I beg to be excused, Your Highness. I have to see a man . . . about a bitch."

That was the end of my tale. So far. And the girl to whom I had been telling it—what was her name? Ah, yes, Celeste—and Celeste sighed profoundly. I had forgotten entirely she was present, that I sat in her rooms, as the old story and its sequel unrolled itself again in my mind. Memory is a bitter, tricky thing to play with. I did not feel quite at ease having unwrapped these best-forgotten emotions before some chance-met woman.

Or was it that such things had been bottled up in me for so long that they now forced their way out without my knowing? I couldn't say, but I did feel better for having talked myself clean.

Celeste sighed again, and now I noticed that her eyes were shiny with tears. The emotions of the New Men are roused easily.

"Where are they now?" she asked. "Tiger and Mattis?"

"They're under guard in the police quarters here at the Palace."

"And what will happen to them?"

"Who knows? It's been four days since the fights at the Arena, and the Dianotrix hasn't yet made her mind up. She might let them live, or then again she mightn't."

"Oh, well, she'll take care of them. One way or another." And with that Celeste shrugged away the fate of Tiger and Mattis and came back to the present. She slid off the arm of the chair and into my lap.

She had forgotten one thing,

however, the force of loyalty. As I thought of Menilissa, as I thought of the Team, disgust arose in me, disgust for myself and for this barbarian little trollop. So she thought I'd be a feather in her cap? She'd get her friends on the visor as soon as I'd left her apartment and she'd tell them about her experiences with a real live Teamster, would she now?

Well, she had a surprise coming. I grinned. I got up out of my chair and dear little Celeste landed on the floor with a bump. At first she didn't get what had happened, then she started to cuss me out. But if the New Men could be arrogant, so could I, given a chance. I didn't even turn around as I strode to the door.

I opened it, and stood face to face with the Dianotrix and one of her aides. She glared up at me with yellow cat's eyes.

"What are you doing here?" she demanded.

"Leaving," I said.

"They told me I'd find you

here, but I didn't believe it. I thought better of you than that." Then she glanced past my shoulder and saw Celeste arising from the floor in wrath. "What did you do to my sister?"

"Your sister?"

"Yes, my sister!"

"I thought she reminded me of someone I knew. Something in her manner."

Celeste called: "Do you know what this ill-mannered brute did to me?"

"What did you do to her?" The Dianotrix was sparking with jealousy.

"I gave her the brush," I said, and left them standing. The last thing I heard was the Dianotrix saying "He is learning to assert himself, isn't he? I may have some use for him yet." And she didn't sound particularly angry any more.

Learning—what was I learning? To behave as arrogantly as the New Men? Sure, walk in mud and you get dirty. But would that admit me to their society with full status, would

that make me less lonesome for the companionship that united the Teams, for the love that held them together? Love! That certainly was missing in the New Men's emotional make-up. Love? Why was it missing?

In my room I kept a file of old records from the days of the Teams, taken directly from the torkle coil during our meetings. I also kept there the little disc that I had brought away with me from the tomb, that day Tiger and I were out at Rosemont cemetery. So now I played the excerpts that constituted the essence of Menilissa. I played the old recordings and found out where the excerpts fitted in, and how.

Then I put through a call to the Central Library where they kept transcripts of all the meetings and legislative sessions of the New Men. I had them put some of those records on the wire and played those also over and over again. I compared the three. I found out what the

difference was, and I saw why the New Men behaved as they did. And I knew I'd have to make them see it, too. The work of Team H.E. 135 was, as yet, incomplete.

The police quarters in the Palace were bare and functional. And bare and functional was my request to obtain the services of Tiger. The officer in charge never doubted my authority for one moment. Yes, I was learning from the New Men, with a vengeance. I also demanded the use of an electronic workshop, and once in there, chased out the guard that accompanied Tiger.

Tiger acted sullen. He saw me marching around a free man, respected and obeyed, while he himself was kept under guard. But he bowed to my new-found power and did as I asked him. First I had him hook my pocket 'corder to a torkle coil so that the 'corder, instead of transcribing, would play recordings into the torkle which would then act as a

transmitter. Then he tuned the coil so that its emission would adjust itself automatically and slide unnoticed into the thought stream of anybody in range. Next we made dubbings of Menilissa's thoughts and emotions which we took off various of the old transcriptions which I had brought along with me.

Finally, Tiger handed me the pale blue disc, undistinguishable from any standard 18 record, and said: "There, now what?"

I turned my back on him and pretended to study the pin-up girl on a calendar. "You know," I said, "that the order may come at any moment to execute both you and Mattis?"

"I didn't." Tiger's voice was pensive. "But I thought it might."

I kept my back turned. "I'll be having a conference with the Dianotrix tonight. Some time shortly after one a.m., up in her apartments. It'll be a private conference; there'll be nobody else present.

Maybe she could be . . . persuaded to change her mind."

Tiger stood quite still for a moment until he had digested my words. Then I heard him moving about, searching through drawers and tool racks, and there was the clink of metal muffled by cloth.

"It's very careless of the guards to leave their dismantled guns lying on that table by the door. I suppose they were having them cleaned."

Tiger only grunted to show he had heard me.

After a while I said: "Well, I suppose I'd better take you back to your cell."

Picking up the modified 'corder I led Tiger out and told the shop attendant that I had borrowed some tools for my personal use and would return them tomorrow. Then I took Tiger directly to his cell, which he shared with Mattis, and locked the door before the guard got the notion to search him.

At five minutes to one,

when most of the court could reasonably be expected to retire, I went to the apartments of the Dianotrix and requested an immediate audience. The officer on duty as aide-de-camp raised his brows quizzically. Just for that I sent him on an errand that would take him out of the Palace and would keep him away for at least an hour.

"Hello, Alisoun," I said when the Dianotrix came out to greet me, "I hope I'm not keeping you from your sleep."

First she frowned at my easy use of her name, but then she grinned pleasantly. "You aren't keeping me. I've still got a stack of reports to go through." She indicated a pile of records on a table. "Drink?"

"If you please."

While she was filling the glasses I set up my pocket 'corder behind the stack of records and placed on it my own record with the dubbings I had taken that afternoon. It

now needed merely a flick of the finger to set it going.

The Dianotrix brought a glass over to where I sat.

"You know," she said, "I'm beginning to like you quite a bit, friend Alcott."

"You aren't so bad yourself."

"Thanks. From you that is a compliment, indeed."

The strange part about it all was that I really meant what I said. Oh, the Dianotrix was a New Woman all right, no mistake about that. However, I had to admire her for the way she kept order among a bunch of wild, inexperienced youngsters, being a youngster herself. There were very few precedents she could go by, yet in her own level-headed way she had succeeded in keeping order. If she had been a little crude about it, well, that could be forgiven. It is no easy thing to take over the government of a world, especially if that government is only ten years old.

Alisoun sat down so that her eyes were level with mine.

"I know what you're thinking," she said. "What you have been thinking. We've had spy-phones on you for quite a while now, and maybe you yourself have wondered why I've put up with you for such a long time."

"If I'm such a bother, why didn't you get rid of me? You've never accepted me as an equal."

She flared up. "Why don't you try and accept us as equals for a change!" Then she calmed down again. "I don't mind telling you, you've been quite a trial. Sour, mulish, clinging desperately to old fashioned ways and perspectives. And if you think we've been condescending, you should have seen the sneer on your face at times. Only when you forget that you were once a Teamster and when you start to think, then you show amazing insight. So far I haven't been able to make any use of your gifts because you never asserted yourself enough. Still, you have given me something that

my friends were never willing to give me. They all want to give, too. No, that's wrong." She pressed her hand over her eyes. "I mean you give of yourself by accepting from me."

"That's about it," I said, for I knew what she was driving at. "And as for asserting myself, I think I'm getting the hang of that, too."

"Yes, you've changed. I guess it's the trouble with your Team mate and his son that knocked you out of your chrysalis."

"Speaking about Tiger," I interrupted her, "and about Mattis, what are you going to do with them?"

"Oh," she said, casually, "I suppose I'll have to get rid of Mattis. He's brilliant, but he's unstable, like all first generation New Men. And that means I'll have to get rid of Tiger, too. He'd only be running around for the rest of his life trying to find ways to assassinate me. You don't mind, do you?"

"As a matter of fact, I do."

I thought I heard a noise at the door, but I wasn't sure. Alisoun studied me carefully.

"Yes, you do mind. I can see that. And I can also see that you're going to do something to try and stop me. What?"

There was a noise at the door. I reached into my pocket and put my hand on my gun.

"You've sent my aide away," said Alisoun. "Are you going to kill me?" Her eyes widened; surprise, not fear. She frowned. "No, that isn't your way."

"It isn't," I said. And then Tiger came in, followed by Mattis with a gun in his hand.

Alisoun ignored them and spoke to me. "You were down at police quarters this afternoon. So that's what you did. You gave them the tools to escape."

"Right," I said, slowly drawing out my gun. "I could depend on Mattis to get up here. His primary intuitive field is personality projection and strategy . . ."

"Hold it!" shouted Mattis and jumped.

Alisoun's hand had been stealing out toward the switch of her visor. Now it was twisted up behind her back in Mattis' hard grip, and she winced.

I left my chair, went to the middle of the room, pulled the carpet aside and examined the floor for hidden switches. Then I put the carpet back. "Bring her here," I said to Mattis.

He levered the girl up and marched her over to where I stood.

"Is Mattis the one who is going to kill me?" she asked, still showing no fear.

"You bet," he answered, "and if it's the last thing I do, I don't want to, really, but I see no other way out."

"Go ahead! She deserves it!" blurted Tiger.

"Oh, stop being melodramatic, all of you." I had come around behind Mattis and was now covering him with my gun, standing five feet away. He still had Ali-

soun's arm twisted up, and his gun was in her side. "Let go of the Dianotrix."

"And I will not. Even if you shoot me, I'll still get her, too."

"That will get us where?" said Alisoun.

I grinned. "Exactly! Now listen to me, all of you. I'm going to give you a theory, and after you've decided whether to accept it or reject it, then you can still hold your shooting match."

Mattis nodded and Tiger grunted his unwilling approval.

"All right. You know how an atomic pile works. There is a critical mass of uranium which would go into ultimate fission immediately if it were not for the cadmium dampers. Now, for uranium read nervous energy. Imagine a highly brilliant, energetic man, without humility, without pity, a man who, when he wants something, wants it and takes steps to get it, without considering anyone else. A restless man, always hunting for something and yet not know-

ing what he is hunting for. Would you call such a man unstable? As uranium is unstable?"

"Definitely," said Mattis.

Alisoun sneered. "I'm glad you agree, for it was you he just described."

"Hold it," I said. "To complete the image. Imagine a society of such men. Would you not say that they constitute a critical mass, which, if not dampened, might explode constantly and uncontrollably?"

"I get it." Alisoun's voice was shrill. "The first generation!" Then she winced as Mattis twisted her arm higher.

"All of them," I said. "All of the New Men. Sure, the second and third generations have introduced a few flimsy dampers, but you, too, are basically unstable. You restrain yourself artificially through a complex system of laws. Every time there is disagreement, you run to court and make a law about it before the situation gets out of

hand, which it does, nevertheless, quite often. For such cases, the Arena. You are unwilling to accept precedence and the necessary courtesies of society. So you invent an elaborate and stiff ritual, surface formality."

Alisoun sputtered. "Your indictment is sweeping, but won't hold up. You say we can't get along with each other. How do you account for the fact, then, that our sexual unit is the time-sector, millions of beings, instead of a puny two-man family? Explain that away, and then tell me we can't get along with each other!"

"You're making a virtue out of a necessity. If two of you New Men stayed together longer than one week you'd be at each other's throats for sure. So you have to switch around. All of you want to receive; none of you will give of themselves. Therefore, none of you receives anything from the other. You're a bunch of highstrung, frustrated neurotics."

"That's telling 'em!" cheered Tiger.

"How else would you explain your arrogance, your promiscuity, your cruelty? Why else is the Arena your favourite pastime? You have solved the problem of time-change, but that does not help you one whit in overcoming the problems of your own time-sector. Why?"

"Why?" asked a new voice, and I jumped Mattis before he had a chance to fire. I had been waiting for such interruption, but it had caught him unprepared.

The aide had come in, followed by four police guards, the prison officer, and Celeste.

Celeste came forward. "I went to see you at your quarters, Alcott, and you weren't there. Then I met this officer," she pointed to the aide, "and we went looking at the prison cells, and we found the two prisoners gone, and then we put four and four together and arrived here. Just in time, I hope."

The guards had disarmed

Mattis and me, and now we were standing under guard, our backs to the wall near the big table.

"I always told you," said Celeste, before anyone could make a comment, "that this Teamster was dangerous, more dangerous than any first generation man. Now I hope you'll believe me."

Oh, beware of a woman spurned, I said to myself as I inched toward the table.

Alisoun nodded, rubbing her arm. "I'll certainly reconsider my judgment. As far as these other two are concerned," she nodded at Tiger and Mattis, "you might as well take them away now."

Celeste had picked up one of the guns. "Oh, let me take care of Alcott. Please, Alisoun, please."

Very, very slowly I reached behind the stack of records and flipped the switch of the 'corder that stood in readiness.

Alisoun was the first to notice the change. "What have you done now, you devil?" she asked me. Then

she shouted: "Put that gun down, you fool."

With one sweep of his fist the aide knocked it out of Celeste's hand. She backed away, startled.

I looked around the room. Everybody seemed more relaxed than before.

"All right, what is going on now?" said Alisoun.

"I'll tell you," I said. "But this time let me finish. Here's the situation. The Teams were complete units, intellectually, physically and emotionally. Though it may have been an accident that brought the first women into the Teams, their presence was found to be of value and they soon became the keystone, the dampers, the stabilizing influence. Their emotions answered and complemented those of their male companions. And that is why the Teams, though individually as brilliant and as high-strung as any New Man, functioned so well. Only when the Teams went about creating the mentality of the New Men, this

stabilizing influence was not included. Tiger, do you remember the set-up we used on the embryos?"

"Yes."

"We had the lenses right in the grids and the women stood directly in front of the lenses. What would happen to the emotions and the influence of the women in such a case?"

"You got it, brother," shouted Tiger. "They wouldn't get through. They'd set up a feed-back, like when a mike is too close to a loudspeaker. They'd be cancelled out."

"So what are you doing now?" asked Alisoun.

"I took transcriptions of those missing dampers, those missing influences, and I'm adding them now, mechanically and automatically." I showed her the modified 'cor-der and the dubbings I had taken, and explained how I had arrived at my theory. "And that's why we have been able to talk this over so peacefully, why there hasn't been any shooting or fighting."

"Well, I'm certainly doing

some fighting," interrupted Celeste. She turned to her sister. "Do you think I'm going to stand by while this man makes a fool of you? I don't care what you do about the other two, but Alcott should be removed, definitely."

"You see," I said to Alisoun. "Even your little sister is under the influence of love. Only in her case it manifests itself as jealousy. She may be more stable, but she is also more jealous, jealous of you."

"Keep talking, mister!" snapped Celeste.

"Don't worry, I shall. And while I'm at it, I might as well admit that *now* I'm quite ready to admit that I was just as condescending to you as you were to me. I always looked down on you as barbarians, but now I'm willing to admit my error, and I beg your forgiveness."

"That's darn white of you." Celeste flounced out of the room.

Alisoun looked at me with big amber eyes and smiled. "I'm afraid you've made your-

self an enemy there. She'll never forgive you for dumping her this afternoon."

"That doesn't bother me now. There are bigger things in the scale. We have to work this thing out together, and you can count on my full co-operation."

"I'm very happy to hear that."

The aide was examining my 'corder with interest. "An automatic peacemaker, eh? A pity we can't keep it running for ever. What will happen when the record ends?"

"Nothing much," I said. "You are highly intelligent and so you can readily synthesize what you cannot experience emotionally. The Greeks had a word for it, *agape*, love of the soul, true love. Love is such a delicate thing that it is easily forgotten when you are trying to build a world from scratch. In fact, I doubt very much that you ever knew you lacked it, never having experienced it."

"It's our fault, too," said Tiger. "If we had thought far enough, we would have realised that the women wouldn't get through with their emotions. We should have brought in other women to work on with the torkle. Then the Teams would have gotten through as a unit."

"Too late now," I said. "But, luckily, we can rectify the mistake. *Agape* is the missing damper; now that you know it, you will not forget it."

"It makes you see things in quite a different light," said Alisoun. "But how are we going to change *all* the New Men and *permanently*?"

"You were close to the answer yourself a moment ago. You told me that I was able to give you something that your friends and the members of your court were not able to give you. So I say: first publish the facts. Put the record on the air so that

everybody will know what you are talking about. Second, allow marriages between Old Men and New Men. The Old will gladly receive of the New and give of themselves in return. The next generation will then inherit the missing emotions, and their intuitive faculties will be none the worse for it. Thirdly, make a law effective immediately, designating once more the family as the unit. Man, wife and children. That will stabilise the present generation."

Alisoun pursed her lips and nodded thoughtfully. "And, fourthly, that I, as the Dianotrix of the Central Union, should set an example. I can count on your co-operation, can't I?"

She may have blushed.

At any rate the aide, a New Man who usually held himself rather aloof, slapped me heartily on the back and said: "Let me be the first to congratulate you, my friend."

Only very smart thinking could save him from a treacherous

CONSPIRACY

by JOHN CHRISTOPHER

MOST of the time she did the washing up in the kitchen; it was only at the busy times that she helped wait on tables. And sometimes in the evenings when there was not much doing. Larry, the manager, would take Hilda out for a beer, and Gladys, the other waitress, would get her to serve any odd customer who came in. It was a pleasant enough change after the stifling steamy kitchen.

She met John that way. Gladys was sitting at a table at the back and she called out to her: "Jenny!" She came through, wiping her hands. "See to that one, will you, honey? My feet."

He was a hamburger and French fried. She brought him

the food and stood waiting. He looked at her, in question.

"Seventy-five cents," she said. "With the coffee."

"You mean, I should pay now?"

"Rule of the house. I'm sorry."

"That's O.K. I just didn't know."

He brought a handful of coins out of his pocket and she watched him fumble among them. He got it right, but he was slow about it. She took the three quarters from him.

"You don't talk like a foreigner," she observed.

"A foreigner?" He looked at her casually but quickly. "Why should I?"

"Thought maybe you weren't used to the money."

He smiled. "I always handle money carefully. Don't like to see it go so fast."

"Who does?"

But she watched him from the back of the room. At school she had always been told that her worst failing was her habit of sticking to first impressions even when they were wrong. He's a foreigner, she thought. He didn't look foreign, and he talked good English, but she was certain about him. He was a young man, not much taller than herself and of heavy build. He wore black rimmed glasses. She noted the way he ate his food; correctly, a little too correctly. What was he doing in this kind of hash-joint, for that matter? He wasn't their usual line of trade.

She was not a girl of great imagination. If she had been the problem would not have engaged her so much. An imaginative outlook would have provided half a dozen good and sufficient stories to

account for the small details that were wrong. Jenny was conscious only that they were wrong. Pretending to read a magazine, she watched him covertly.

He called her over when he had finished. "Another coffee, please."

She brought it and took the money from him. She was turning to go back, when he spoke to her, softly: "Wait."

"Yes?"

"You were watching me while I was eating. Why?"

"Watching you? Why should I watch you? I've been reading a magazine."

He glanced round the restaurant. There were three or four people, in addition to himself. They weren't paying any attention, as far as she could judge.

"You can't talk in a place like this. What time do you finish?"

"Ten o'clock. And I go straight home."

"I'd like to walk you home tonight. No, honest, it's all on

the level. I don't look crooked, do I?"

"They never do," she said, suspiciously.

"Well, as far as you go along 37th. There's plenty of light and plenty of people. How about that?"

"I suppose I've got no objection."

"Side door?"

"No. Larry would see you maybe and start shooting his mouth off. On the sidewalk, out front."

"I'll be there."

He put his arm through hers. "South?"

"Yes. I didn't ask you should lean on me."

He released her. "I'm not being fresh, am I?"

She looked at him. "If you don't know . . ."

"That's one of the things. My name's John. John Curtis. What's yours?"

"Jenny. Genevieve Steyrette."

"French?"

"My gran'pop was. He

picked Genevieve. You from that part?"

"Jenny," he said, "what made you think I was a foreigner?"

She was beginning to be a little scared. "I don't have any idea what you're talking about. I made a remark. Anyone can make a remark. It doesn't have to mean anything. It's a free country."

She saw him smile, and she thought the smile was a little sad, but she might have been mistaken.

"I hope so. But you were watching me while I was eating."

"I was looking at a magazine."

"And watching me."

He spoke with an utter certainty that frightened her. No one could have been as sure as that, that she wasn't really reading. She thought of darting away into the crowd, but the idea of possibly causing a scene deterred her.

"O.K.," she said. "I was watching you. Now tell me how you knew I was watching

you. Tell me what makes you so sure."

"When I called you over for that extra coffee, I just flicked my finger and you came. You wouldn't have noticed it if you'd really been reading."

"And if you'd thought I was reading, I guess you'd have done something more than flick your fingers if you wanted me to come over."

"You're bright," he said. "What are you doing back there?"

"I could ask you that. You're not the kind of guy we normally get in the Electric Rooms."

He laughed. He had an infectious, cheering laugh. "Look, you're not so tired you can't stay up another half hour. Think you can trust me yet? There's a bench in the park right at the entrance. It's got a light over it. Well?"

The situation interested her. This sort of thing didn't happen very often; in fact, it didn't happen at all.

"O.K., but remember I'm watching you."

"That's what I want to talk about."

Someone, earlier in the evening, a couple probably, had wrecked the light above the park bench. She drew a little away from him.

"You knew about this?"

"No, honest. And there's a good moon."

They sat down; he didn't try to sit very close. She was relieved and yet, of course, a little disappointed.

He brought a packet out. "Cigarette?"

"I don't use them."

He put the packet away. "Then I don't need to."

She stood up. "I don't know what it's all about, but I think I'll get out from it. What you got there—reefers?"

"Look," he said. "Don't go yet. Come on, sit down again. I want your help. What would you say if someone was in a situation where he needed to have everything just right—

acting, kind of—and he found he was slipping up on the little things? It's the little things that count. It's important that everything should be just right. Very important."

"I was right, then!" She stared at him. "You are a foreigner?"

"Yes. You were right."

"You speak English good, for a foreigner."

"I've learned it. You can learn a language. That's one of the big things. I'm all right on the big things."

The idea struck her. "You a Red? You from Russia?"

"No."

"I can't think of any other kind of foreigner who would need to keep under cover. You must be a spy of some kind."

"Honest to God—not a Russian, not a spy. I suppose you could call me a refugee."

"Refugees don't need to stay hidden," she remarked, with conviction. "They go on T.V."

"Special kind. If I was a spy, d'you think I would talk to you this way? There's

nothing to stop you turning me in to the nearest cop."

"If you aren't afraid of the cops, who then?"

"My own people."

"Then you should go to the cops. They'd put a guard on you. You wouldn't have anything to worry about."

"Believe me," he said, "unless I can keep right out of sight, I'm finished. No police anywhere could save me."

"As bad as that?"

"Worse. Are you going to help me?"

"I don't know what I can do. What do you want?"

"First thing—what did I do wrong back there?"

"It wasn't anything much. Only thing is, the kind of people who come to eat at a joint like ours know you've got to pay cash down on the nail. It seemed funny, you not knowing that."

He said, very slowly: "Thank you. Thank you, Jenny. It's that kind of thing that I've got to know. You see, you get a lot of things from books and magazines,

and radio, but there's always something they leave out."

"You done a lot of studying before you came here?"

"Quite a lot."

"How was it they let you?"

"They thought they could trust me."

"And you double-crossed them?"

"I escaped." He said it simply. He looked at her; he had a face both strong and gentle, and now that she had seen more of him she thought she could trace a foreign look in his features; something hard to define, but foreign.

"You could help me in little things like that," he went on. "You've got no rings on your fingers—that means you're not married, engaged?"

There was a questioning inflection in his voice.

"No." She added, honestly: "No boy friend, either. No regular, that is."

"Help me out, Jenny," he said. "Let me see you, when you've got time off. Keep me on the line. You'll do that?"

"O.K.," she said. "But I'll be watching you, too. If you're a spy or anything, I'll turn you in. I'm not going to get mixed up in anything of that kind."

"You don't have to worry about that," he told her.

She had taken him on for the excitement which was rare enough in her life, but by the third time she met him she was worrying on his behalf. He was always available for any time she fixed, and working at the Electric Rooms meant her time off was in the mornings with a couple of hours in the afternoon—not the kind of thing that fitted into the pattern of other people's jobs very well. What kind of a job did John have? And if he didn't have one, what was he doing for money? They walked in the park, with the autumn sun sparkling frostily off the water in the lake, and she put the question to him.

He said: "No, I don't have a job."

"And money? How are you fixed?"

"That's kind of you, Jenny." He looked at her, and she had a queer feeling inside. She had been going to tell him she had a little put by, if he needed something. "I can manage all right. You don't have to worry."

"You brought money out with you?"

He shook his head. "It wouldn't have been any good."

"How are you going to manage, then?"

He smiled. "I've got some talent. I'll show you sometime. I'll show you now, if you like. Let's go have a coke somewhere."

They went into a drug store in a little street that went off at right angles to the park entrance. He ordered cokes, and they drank them. There was a one-armed bandit by the door, waiting for dimes to be put in. John changed a quarter into two dimes and a nickel. He jerked his head towards the fruit machine.

"Stay here and watch. Don't be surprised."

She watched him put one of the dimes in. He pulled the handle and the dial spun dizzily. Nothing happened. He put the other dime in, and the dial spun again. The three clicked into line, one after another. The dimes came pouring out, and he stuffed them in his pocket. He came back to the counter.

"I guess it's my lucky day. Shall we get?"

Outside in the street, she said, a little angrily: "You telling me you play the fruit machines for a living?"

"I pick up some change that way."

"You never win on those things. No one does."

He steered her into another drug store. This time he played it three times before the jackpot came up.

She said: "Did you do that?"

"You saw me."

"I don't believe it."

"I told you I was going to do it."

"I still don't believe it."

"Right, we'll do it again. On the third pull. Hitting the jackpot straight away might attract attention."

She watched him keep his promise in the next drugstore. He scooped the money up and shoved it in her handbag. There was about three dollars in dimes.

She said: "I believe you. But *how*?"

He shook his head. "Too hard to explain."

She drew away a little. "I don't like it—it's queer."

He was looking at her keenly, with a desperate keenness. It was as though he were entirely dependent on her—the dependence got over, and she felt awed and grateful and protective. She lost her fear. She touched his hand with hers. "I'm sorry," she said. "It was strange. I know it must be all right, though. Still, you can't make a living this way. You can't spend your time going round drugstores; they would wise up to you."

"You're smart, Jenny," he said. "They would. But you see, the gift—it works other ways, too. Horse racing and so on. As long as I don't overdo things, I'll manage all right."

She said: "With that kind of thing you could do big things. Real big. Stocks and shares, maybe?"

He nodded. "I could. But don't forget, I'm a refugee. I've got to keep under cover."

"What was it like, back where you used to live? Was it very bad?"

"You can't imagine how bad."

"And you're sure they're still looking for you? Maybe they've given you up?"

"They don't give anyone up. I know that."

Their tour of drugstores had taken them some distance from their usual stamping grounds. Jenny looked at her wrist watch.

"Golly," she said, "half past four. I got to be getting back. Let's take a bus. We can get one at the corner."

"I don't ride buses."

She said, impatiently: "Come on. You're not going to be noticed any more in a bus than on a sidewalk. I only got five minutes to get back."

"You get the bus," he said. "See you tonight when you finish?"

She stared at him. "You really won't come with me?"

"I'll explain some time." He gave her a friendly push. "Don't be hurt."

She was surprised to find, as she dashed for the bus, that she wasn't hurt, either.

It was about a week later that she first admitted to herself that she was in love with John. She was an honest girl, and she admitted at the same time that the fact that he was the first presentable man who had taken a serious interest in her had a lot to do with it. But the reasons were unimportant compared with the pleasure of being in love with him. She tried for a time to pretend that he loved her, too; he was most attentive to

her, and she knew she helped to make him less melancholy—eased his incessant loneliness as well as safeguarding him against the fears that beset him. But she couldn't fool herself it was any more than that.

She went to see a consulting psychiatrist about the fears, clutching the ten dollar bill in her hand and handing it over, sticky and crumpled, to the psychiatrist's receptionist.

His name was Morenberg. He was a short, dark, tubby man, with a look of smiling to himself all the time. He looked at the name on the slip.

"Miss Steyrette. Tell me now, what's troubling you? Just drop it all in my lap." He smiled to himself again. "You've paid me ten dollars and you might as well get your money's worth. Don't worry about shocking me; on the other hand, you needn't feel you have to shock me. Just let me have it straight."

"It's not about myself. A friend."

He smiled, as at an old

joke. "Tell me about your friend, then."

She told him; all the points that had been troubling her from the beginning—the refugee story, the strangeness, the business with the fruit machines, the refusal to use buses. It all poured out. Dr. Morenberg listened with attention, occasionally smiling and occasionally jotting a note down on his little pad.

She said: "I don't like to think of him being worried all the time about these people he thinks are after him. Do you think there could be people after him, doctor? There'd be something about it in the papers if it were true, wouldn't there?"

Dr. Morenberg stirred himself. "I believe in being frank, Miss Steyrette. I always think that it's the best way, both with patients and their friends and relations. And in this case, it's only too clear. I'm sorry to tell you that your friend is in urgent need of medical care. He is mentally ill. The thing that's wrong

with him is what we call paranoia, a disease of the personality. It's quite common to believe that people are hunting you, when you're in this state, and not uncommon to have illusions about your own identity or origin. Unfortunately, it's nearly always progressive. The patient gets more and more out of touch with reality."

She said, quietly: "You mean, there's nothing can be done? I just got to watch him getting worse all the time?"

"It's not as bad as that. I said progressive, but I was talking about cases that are not attended to. Paranoia of this kind, I should explain, is not a certifiable mental condition. It can be treated, and treated successfully, but the patient has to be persuaded to come for treatment voluntarily. There can't be any compulsion."

"And—if he did come, you could cure him?"

"I'm pretty confident."

He had been carrying her

away with his confidence. Now she said: "Wait a minute. The fruit machine business—how do you get over that? I saw it myself."

"Yes," Dr. Morenberg said. "I found that very interesting. My first impulse, of course, was to wonder if you yourself were not the victim of illusions—in fact, to wonder whether your friend really existed at all. People make up strange surroundings for themselves when they find the real ones unbearable. But the theory wouldn't hold water. You are a pre-eminently sane young woman, Miss Steyrette—above average in that respect, and I assure you that it is a matter of averages."

"How do you account for it, then—the fruit machine stuff?"

Dr. Morenberg tapped his pad thoughtfully. "There are a lot of things we're beginning to realise we don't understand much about. To hit the jackpot on a fruit machine consistently and at will would involve what we call tele-

kinesis. Scientists claim to have demonstrated something like that in a laboratory. I would be very interested to meet your friend, from that point of view alone."

"And you could cure him?"

"We could certainly try. I've warned you—unless you can persuade him to accept treatment, he will get worse."

She thought he might be angry at her interference, and the first meeting afterwards she could not bring herself to tell him about the visit to Dr. Morenberg. She got it out the next time, on a bright November morning as they sat in the park together, and looked at him, half-frightened, waiting for his reaction.

He shook his head, sadly reproving, but he smiled at her. "You should have told me, Jenny, before going to see someone like that. I could have told you what he would have said—exactly what he would have said. Do I sound crazy—look crazy?"

"No." She looked at him.
 "No, of course not."

"It could be dangerous to me, your going to see doctors and telling them the things I have told you. You'll have to believe that. My enemies—some of them are doctors. This man you went to—he must be all right, because if he hadn't been they would have found me by now. And they haven't. But he could still be dangerous if you were to go on seeing him. He only has to talk to the wrong person."

"You won't go to see him yourself, then?"

"Jenny, Jenny, listen to me! I've been telling you the truth, always the truth. And I depend on you. You are not to go back to Dr. Morenberg. You understand?"

"Yes," she said. "I understand."

But she went back to the psychiatrist, and with no real sense of guilt. It was the thought of her own inadequacy that sent her back. John depended on her, and what

was she? A girl who washed dishes in a cheap hash-joint, who didn't even get to wait on tables most of the time. She was entirely confused as to what the truth, the real truth, about John might be, but whatever it was, it was impossible for her to carry the weight of it by herself. John had admitted that Dr. Morenberg was not dangerous himself; if it were true what he said, about being a refugee from somewhere else, then he probably didn't realise that doctors here would not say anything about things that were told them when people didn't want them told. And if it weren't true—if it was this paranoia thing . . . Either way she had to have help, and Dr. Morenberg was the only person she could turn to. He had insisted on her fee being returned to her at the end of her previous interview with him.

He looked pleased to see her, when she came again. He was smoking a heavy black pipe; he knocked it out in an

old tin ash-tray, and shook hands with her.

"Your friend wouldn't come then?"

"No. He told me I wasn't to come either."

"But you disobeyed him? Very sensible of you. It's a thing people commonly find hard to do—to be fond of a person and yet to appreciate that for their own good one must run counter to their most strongly expressed wishes."

"One thing. It's very important. You won't tell anyone else what I've been telling you? You promise that?"

"I will, but it isn't really necessary. It's part of our duty to protect the privacy of people who come to us. And the fact that we are in business at all is proof that we do it. It would get around quickly enough if we were in the habit of repeating things and trade would very soon drop off."

"But not even other doctors?"

"The privacy is absolute."

She said discouraged: "But I still don't see how I can

persuade him to come and see you. I can't even tell him that I've seen you again."

"We shall have to make a campaign of it. The first thing to do is to learn more of the nature of your friend's divorce from his environment—that is to find out what he believes to be the truth about his origin. I think perhaps you can do something in that line without disturbing him and without mentioning me. You must remember of course that he honestly *believes* these things. But I can see I don't need to give you that kind of advice. You are a sympathetic person. To a large extent, that is why your friend has come to depend on you."

"He's lonely . . ."

"Of course he's lonely. And he will get even lonelier if his trouble isn't checked; in time he will grow away from you as well, and it may be too late to do anything at all for him then. It's now we must act."

"What do you want me to do?"

"Get him to talk to you about his other country. Don't try to be subtle. Ask him outright. It's natural that you should want to know."

She said, doubtfully: "I'll try."

"You'll find it won't be hard."

"The great metal gates," John said, ". . . stretching high up, and the perimeter wall running away in the curve that holds a whole city in a vice—seeing that fall away behind me was something that just didn't seem real. I had been out of the city once before, under the usual armed guard. But this time I was on my own, in one of the small armoured cars. I couldn't properly believe it. You know, I was even tempted to run the car back towards the city, to make sure I'd really got away from it. I didn't, of course. For ten years I had been concentrating on making no single suspicious move, and I wasn't going to fail at the last."

"But where?" She couldn't keep the doubt out of her voice. "What country?"

"I told you you'd find it hard. No different country—a different world."

"Mars?" she inquired, sceptically.

"Not Mars." He smiled. "I know that much. But I don't know much more. In my world the rulers aren't interested in that kind of knowledge—they only want power, and the means to power. The stars are different there. Or are they? I only saw the stars once—the time I told you about, the first time I was outside the city. The second time, when I escaped, it was daytime. And you see no stars in the city. But I think they were different."

She said: "I don't understand that—about the stars."

"Never mind. It's a long way away. Or perhaps, in another sense, just round the corner—even side by side. The vibrator makes it an easy crossing, anyway. Somehow you don't even notice the

scene changing round you. One second, there—and then, here.”

She shook her head. “I don’t get any of that.”

“It doesn’t matter. Look, think of it this way. Your world, this world, on one page of a book, and the other world, my old world, on the page backing onto it. The vibrator breaks through the paper. I was there—now I’m here. On the other side of all the things we see now, there’s the city. On the other side; or a billion billion miles away.”

“This about the vibrator. You mean you’re not the only one who’s come—through the paper?”

“I wish I were. I don’t know how many there are over here. Thousands, anyway.”

“Thousands! Doing what?”

He looked at her sadly, wearily. “Doing what I was trained to do. Preparing to take your world over.”

“But why?”

He spread his hands. “Because they can’t help them-

selves. Because for hundreds—over a thousand—years, they have held power on my world by brutality and force. They need to go on using force because they are afraid to stop. All that time ago, a group made themselves masters of my world, and they did it at a time when our science was developed enough to make it easy enough to hold power once it was gained. There are a lot of things you need, if you are going to hold onto power—but especially good communications. My world was advanced enough to have them then, as your world has them now.”

He looked out to the lake, where a swan was swimming lazily and majestically.

“And there’s something else you need,” he went on grimly, “to hold power. You need ruthlessness. My people had that, all right.”

“Your people?”

“Of course. I couldn’t be here if I didn’t belong to the rulers. The other poor devils

don't get the chance to do anything but work and obey orders. For over a thousand years it's been like that. My people are thorough. If any one of their own showed signs of weakness, of sentiment, he was killed at once. I only survived by being able to disguise my true feelings." He laughed. "I was trained as one of the elite—one of the invading army. For years I studied books from this world—films—records of radio programmes. Then, when I was properly trained, they sent me through the barrier. And I deserted. It was as simple as that."

She said: "But if there are others—if there's an invasion going on as you say—surely you must let people know over here. The President—someone. Otherwise . . ."

"Otherwise I'll find myself caught when they take over? But I know the schedule. There's at least twenty years before that happens—in this part of your world, anyway. And if I tried to tell anyone of

this, what would I be doing? Only pinpointing myself for my own people to pick up. Not one of your people would believe me. I wouldn't be doing them any good, and for myself I might as well commit suicide. I would be committing suicide."

"So there's nothing to do but hide—hide all the time?"

"Don't despise a life of hiding," he said, gently. "On my world, Jenny, there's nowhere to hide. To be able to hide means freedom."

She said, as though irrelevantly: "What's wrong with buses?"

"You're smart, Jenny. The vibrator. It needs a power source. The ones you have here are primitive, but they will serve. A bus could always be a trap."

"Even when it's full of people?"

"As long as I'm free, I'm a danger to their plans. That's the way they see it. To eliminate me they would take a dozen bus loads of people through the barrier if neces-

sary. I have to avoid everything of that kind."

She said, in despair: "And that's the future—that's all you have to look forward to? Years of hiding—not being able even to ride in a bus—and then, in the end, them running things here as they do on your world? What kind of life is that going to be?"

"A better one than the old. You can't understand. You haven't seen the big metal gates close behind you."

"But isn't there anything you can do—anything that can be done?"

"Jenny," he said, "you're the only person I can trust—and you don't really believe me, do you?"

Dr. Morenberg said: "One of the most interesting illusions I've come across. The kind of thing that Spencer . . . Decidedly interesting. What did he say happened to the thing he came across the—the barrier in? An armoured car, wasn't it? I should have

thought that would attract some attention?"

"He was supposed to come over as an Army man—he said they had it all fixed for him—records and papers and that kind of stuff. It was a duplicate of the armoured cars the Army uses. He said he ditched it—drove it up to the edge of a lake, got out and sent it on in."

"Vibrator and all?"

"That's what he said. He thought maybe they might be fooled—that they might think there had been some kind of accident and he had never arrived. He said there were accidents like that from time to time."

"He said that, did he? Remarkable evidence of system in the story." He nodded, as though confirming something to himself. "Spencer's kind of thing, all right. You usually meet your friend in the park? South side?"

She nodded. "Most times we sit on the seat by the summer house, at the edge of the lake."

"And you meet him—how often, when?"

"Every afternoon—about three. Except Sundays. Sundays we have the whole day together, and we go right out into the country, if the weather's O.K."

"But not by bus?"

"We got bicycles."

"Very consistent," Dr. Morenberg murmured.

"What do you want I should do?"

He patted her shoulder. "You carry on, Miss Steyrette—Jenny. You don't mind Jenny? Leave things to me for now!"

"And when should I come back?"

"Oh—next Tuesday will do."

But she saw Dr. Morenberg the next afternoon. She saw the tall stranger walking along the path by the edge of the lake, and the shorter figure of Dr. Morenberg trotting beside him. She had an immediate sense of being betrayed. Her impulse was to warn John—to

tell him to run—but by the time she had seen, it was too late. The two men had reached them. She only had time to notice one thing—in the stranger's way of walking there was a barely perceptible oddness. She had noticed it before in John himself.

Dr. Morenberg said: "Hello, Jenny. What a surprise."

John's glance flicked towards the two men. His gaze rested on the stranger. He said, quietly: "So you've run me down."

Dr. Morenberg said: "I was going to invent a casual meeting, but you seem to have guessed. You mustn't blame Jenny for this. She didn't know I was coming, or that I would bring my colleague with me. This is Roger Spencer. He is a very brilliant doctor."

"I know him," John said.

"I hardly think you can," Dr. Morenberg said. "He lives in Philadelphia, and he's only been over from Europe for a year."

John smiled. "Europe?"

Jenny said: "Dr. Morenberg—you promised you wouldn't tell anyone else. You promised."

"In medical practice," Dr. Morenberg said, "one talks about cases with people who might be able to help—as long as no personal details are given, the individual's privacy is maintained. I felt it would help to discuss your friend's case with Dr. Spencer. He specializes in troubles similar to his."

John said: "You don't need to tell me about the man who calls himself Dr. Spencer."

"And he was most anxious to see you," Dr. Morenberg went on. "I knew you and Jenny met in the park. I plead guilty to bringing him along without your actual consent. He was very sure he would be able to help you."

"Who do you think I am?" Dr. Spencer asked.

Now that he spoke, Jenny recognised the timbre, the very, very slight accent of the voice as another identification with John.

"John was right," she cried. "He is one of them! His voice . . . it's the same kind of voice."

Dr. Morenberg said: "Jenny, don't let your imagination run away with you at this stage."

"It's my English accent," Dr. Spencer said, easily. "I'm not entirely rid of it. And at a guess I should say that John here is from England, too. That's the similarity you noticed."

"You asked me who I thought you were," John said. "I'll tell you who you are. Your name is Antor Perrent, and you are a grade three officer in the Plan."

"Most interesting," Dr. Spencer said to Dr. Morenberg. "It's the Tibbett paranoia all right."

"And your view is . . ." Dr. Morenberg asked.

"As I told you—I regard it as potentially very . . ." He paused, and looked at John. "In your own interest, John, I'm afraid you must have treatment."

He looked and sounded very convincing. Now, at this crucial point, Jenny still didn't know which story to believe. She loved John whether he was mad or not. And she only wanted to help him. Surely these doctors knew best?

She saw John look at her. Then he turned to Dr. Spencer.

"I know I can't get away," he said. "I know what you've got in your pocket, and I know you would use it—on all three of us—if I tried to make a break for it. So I shan't make a break. I'll come with you in your car. I know the vibrator will be fitted. I only ask one thing—let me come with you on my own. Leave Jenny and this other poor devil out of it."

"*Remarkably persistent,*" Dr. Spencer commented, glancing towards Dr. Morenberg.

Dr. Morenberg said: "We only want you to drive along to the hospital I'm attached to, John. I shall be with you—and it's my own car, incidentally."

All four walked together to the park gates. The brilliant late autumn weather still held; the sun gleamed hazily off the water's surface.

Dr. Morenberg's car was parked just outside. John looked at it, and at Dr. Spencer.

"Of course," he said. "You will have fitted the vibrator on this; you must have had opportunity."

Dr. Spencer, his voice soothingly genial, said: "Of course, of course. Get in now. It's only five minutes to the hospital. You'll have a good rest there, and the very best of treatment."

John had one foot on the running board. "Just count these two out, and I'll come. No fuss."

Dr. Morenberg said: "You must let me drive my own car, John! You get in the back."

John said: "Jenny, at least. She needn't come."

"All right. If you don't want her to."

John got in. Dr. Morenberg

went round to the driving seat.

John said: "Get away from here, Jenny. Forget all about this. Get clear. A different city. Anywhere, but away from this part."

Dr. Spencer said: "I'm sure you would rather come to the hospital with us. She'll be all right, John."

John said: "I know I can't trust you. Jenny!"

She had got into the back beside him. She said: "Wherever it is, I want to go with you."

Dr. Spencer got into the seat beside Dr. Morenberg. The engine started.

John said: "Oh, my God!"

The car turned away from the park towards 37th. It crossed an intersection. And another.

Dr. Spencer looked sideways at Dr. Morenberg. His face had a puzzled, inquiring look.

"Yes," Dr. Morenberg said. "I found your little gadget. I disconnected it."

Dr. Spencer's hand went to his pocket, but Dr. Morenberg's own left hand, pointing across his lap, already held something.

"I took the precaution of fitting a silencer," he said.

There were two soft thudding noises, and Dr. Spencer's body began to slide inwards.

Dr. Morenberg called: "Hold it, John. Jenny, I must apologise. I generally say excuse me before I commit murder."

He stopped the car when they were well clear of the city.

"That lake, John. The one where you ditched the armoured car. You think it will take our friend, too?"

John said: "Yes. But how . . ."

"Up to the point of talking to Spencer," Dr. Morenberg said, "I quite frankly thought you were mad. But this young lady isn't the only person with a gift for spotting small defects in a well acted part. Spencer was not as interested

—that is, he didn't show as much interest on the surface—as he should have been, with a case of this uniqueness. He took it all too casually. At the same time, he was very positive on the point of it being a potentially dangerous paranoia, which I did not myself believe; and he wanted to see you without delay.

“So I had a look at my car first thing this morning, and found the vibrator. I suppose it was to be activated by a miniature radio transmitter actually on Spencer?” John nodded. “I thought so. I simply took it off and left it in my apartment. I knew then that your story was true, and that these were the kind of people you could take no chances with. I went through with the scheme for picking you up because it offered the best chance for getting Spencer—what was his real name, Pennant—into a position where I could eliminate him. I think I did it rather well.”

“He had a weapon in his pocket,” John said, “which, if he had had chance to use——”

“He didn't, though,” said Dr. Morenberg.

Jenny said, shakily: “And now what?”

“I've got a friend who's a Government research physicist. I don't think we'd better burden him with the body. There's a lot of red tape likely to tie people up who take private action against trans-dimensional spies. We'll dump Spencer. But I think we can safely burden him with the vibrator. I don't think you need worry about being disbelieved. We've got Spencer's weapon as well. Your friends are going to get quite a shock when the Army starts rolling through the barrier in the opposite direction.”

“The city . . .” John said, wistfully. “Those walls . . . I'd like to see those walls flattened.”

“Don't worry,” Dr. Morenberg said. “You will.”



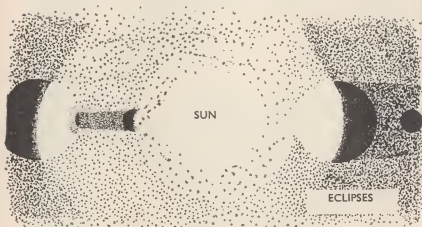
SEARCHING THE SKY

*For many hundreds of years man has
searched the skies, trying to fathom the
meaning of the bright moving lights
above him. What makes him do this?
And how does he do it?*

ASTRONOMERS of a sort have existed ever since primitive man first turned his eyes to the heavens and watched the life-giving, warmth-giving, light-giving Sun sink below the horizon, leaving behind a world of darkness and danger. Man *had* to be interested in the sky. It formed more than half of his visible world, and it contained that glowing orb that he soon came to love and cherish. And at night the stars and Moon shone down into his ignorant, innocent, wondering eyes, filling him with wild surmises. It is not

different times, it is difficult to imagine what a puzzle this must have been to the ancients. And even more so with eclipses!

To men who were perpetually chased and devoured by wild animals, what better explanation of eclipses than that a dragon ate the celestial body involved? That the Moon or Sun was subsequently regurgitated could only be because a benevolent God had interceded on behalf of the devout! It took strong minds and strong hearts to question this theory.



strange that he became more and more concerned with celestial matters.

Slowly, as his knowledge of mundane matters progressed, Man began to try to explain the things he saw in the sky. The rising and setting of the Sun was soon considered to be a periodical event—with a new Sun created every day—or else it was thought that the Sun tunneled through the Earth during the night. Similarly with the Moon, though here the picture was complicated by the changing form of the Moon—the quarters. To us who know why the Moon looks different at

But there *were* strong minds and hearts. The early history of astronomy is studded with them as the sky is studded with stars. They were the men who brought science to the search of the sky. Refusing to ignore the inconsistencies of orthodox theories, they tried to find explanations that more fully covered the facts. In this sense, astronomy was the very first science, giving rise soon to mathematics. The others—chemistry, physics, biology—followed much later. These first scientific astronomers were fully as imaginative as their more gullible

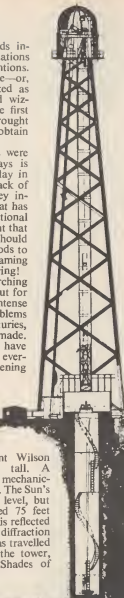
contemporaries, but their minds insisted upon physical explanations rather than supernatural interventions. To be sure, the physical picture—or, rather, pictures—were interpreted as demonstrating the wisdom and wizardry of the Gods. But for the first time, celestial phenomena were brought in line with the laws observed to obtain on Earth.

That these early astronomers were hopelessly wrong in many ways is beside the point. Their errors lay in understandable ignorance and lack of observational accuracy. But they introduced the attitude of mind that has survived to this day in the rational approach to space travel. Without that reasoned attitude to the sky, we should probably still be expecting the gods to raise us to the planets on flaming chariots as a reward for good living!

So it was that the passive searching of the sky, much as one looks out for bad weather, was ousted by an intense scientific application to the problems of the heavens. Down the centuries, advance upon advance has been made. Crude, hand-made instruments have been replaced by devices of ever-increasing delicacy, ever-widening

range. The early astronomers could see little more than the Moon with their naked eyes; the stars were mere points; nebulae did not exist for them. Now, with the largest telescope ever built we can see more than 700 million light years away; and with the newer radio telescopes we can probe space even further.

The search of the sky has become an immense project, dwarfed only by the vastness of space itself. Let us not forget that our searching has a history. Let us remember that we are only doing in a better, more accurate way what Man has done ever since he ceased to be an ape.



THE SUN TOWER at Mount Wilson Observatory is 150 feet tall. A mirror at the top is moved mechanically to follow the Sun all day. The Sun's image is studied at ground level, but some of the light is passed 75 feet below the surface, where it is reflected back to ground level by a diffraction grating. This light, which has travelled 300 feet from the top of the tower, forms a solar spectrum. Shades of Galileo Galilei!



THE OLD SCHOOL TIE

by ANTHONY SHEPPARD

Homobar,
Sept. 2nd, 2027.

Dear George,

I don't know if you are still looking for an interesting job, but if so I may be able to help you. The fact is I need a secretary. I know that this may seem to be a little surprising, but I have made considerable headway since we last met in London some months ago. How far away it all seems now. I'm sorry I was not able to meet you when you arrived in Centaurum, but I was already some millions of miles away. I left a message with my bank manager, to tell you where I had got to, which I hope you received.

I expect that my bank manager told you that, much against his advice, I have sunk the remainder of my capital in one of those small single seater interplanetary jobs that Rolls are turning out so cheaply now. After the long trip to Alpha Centauri I decided to burn my boats, so to speak, and, putting all my eggs in one basket (excuse these awful clichés), blew my return fare, and a lot more besides, on a Mark II "Planetair." It seemed to me that with a brand new system to explore it was a good idea to get in while the going was good, and after less than a week in Centaurum, which I disliked intensely, I was on my way here.

Homobar, I should explain, is the satellite of the third planet. It is smaller than Earth and the atmosphere is thinner, but has a slightly larger oxygen content that more than compensates. At all times one feels a delightful sense of exhilaration and well-being, such as one was led to expect of the Alps from the travel advertisements one used to see at home.

I landed on the third planet after more than a week in space and was mightily disappointed with what I found. There is a small Earth settlement which is visited infrequently by a trading rocket from Centaurum and it is on this rocket that I am forwarding this letter. Should you care to take the job which I am offering you, it will be starting on its next run in about ten weeks (Earth measurement) from now. There is just sufficient left in my account to pay for your fare, should it prove hard for you to raise it, and I enclose a cheque for the necessary amount. Should you decide not to come, please accept the enclosed as a gift in token of our years of friendship at school and after.

I know it will not be an easy decision for you to make, either way, at such short notice and so I will do my best to give you some idea of what Homobar is like, and to fill in the background to the events that led to my position here. Homobar is a somewhat misleading name. One might gather that

there was a ban on the human race. In fact, the name was bestowed by the Prime Minister, who got his classical languages slightly mixed and comes from the Latin, Homo . . . Man, and the Greek root Bar . . . Equal. By this he meant to imply that he was the ruler of a country in which the Bill of Rights and the principles laid down in the so-called Atlantic Charter held sway. In effect it means that all men are equal except us (the Prime Minister and myself), and we control the destinies of the satellite. A highly satisfactory state of affairs. As my personal private secretary you would be accorded similar rank and privileges, and I have no doubt that a cabinet post could be arranged before long.

I did not remain on the third planet for long. Although the miners and their families were friendly enough, I gathered that they tended to resent strangers, much as any isolated community is apt to on Earth. Though with them I was not of them, and though in their way they did their best to make me feel at home, I could feel that it was merely as a sense of duty and not out of any desire to see me remain. Under these circumstances I decided to cut short my stay.

It appeared that nobody had thought the satellite worth a visit. The miners were too busy and had too large a field to work in as it was, and interstellar exploration has not yet extended beyond the main bodies of this system. I decided to be the first member of the human race to set foot on a new world. As it happens I was the second, but this I had no means of knowing.

The trip was completely uneventful, and less than forty-eight hours after leaving the third planet I was circling this world, looking for a suitable place to land. I saw below me a land of rolling hills, of fast-running streams and still seas that reflected the white of the summer-cumulus clouds above. "This," I thought, "is for me."

The pole caps were fairly large, indicating a somewhat cooler climate



than Earth's. I circled, once more at the equator, looking for a likely spot. I wanted to land but saw no harm in choosing the spot that was likely to prove the most comfortable. It was quite by chance that I saw the other rocket. I must have passed almost directly over it, for I was well beyond it when a flash of light caught the corner of my eye. I looked back, and there it was; the wreck of a "Planetair," the sunlight reflected from its twisted metal. I made a wide sweep and came in to land a few hundred yards away from it on a stretch of conveniently handy open grassland.

I made a rapid analysis of the air, and finding it more than satisfactory, dispensed with a space suit and stepped out onto the soil of Homobar. I approached the wreck of the other rocket with a queezy feeling in my stomach. It was pretty badly smashed up and I expected to see the grizzly remains of its former owner spread around inside it, but much to my relief, there was no sign of a body. Someone had been lucky.

As I stepped from the shattered port there came a hail and I looked round to see the man who had stepped from the wreck approaching from a belt of trees. I went to meet him. "Doctor

Livingstone, I presume," I said. "As a matter of fact the name's Smythe-Cooper-Smythe," he said. He obviously had no sense of humour, or so I thought at the time.

He was a well set up looking chap, an ex-rugger centre forward from the look of him, with a left ear slightly cauliflowered from the scrummages. He held out his hand. "And you?" he asked. "Waterman-Jones," I told him, "Douglas, William, Waterman-Jones." "Not one of the Wiltshire Waterman-Joneses, by any chance?" he asked. "As a matter of fact I am, or rather, used to be." "Thought so," he said. "I was at school with your brother." I looked at his tie. Sure enough it was an Old Broadborough. The only trouble was that it seemed a little incongruous on its own. It was the only article of clothing he was wearing.

"You must come and have dinner with me," he said. I must confess that I was a little taken aback, but saw no point in refusing. Besides, I was a little tired of the concentrated rations after forty-eight hours in space, and the mere thought of a cooked meal made my mouth water. He took my arm in the most casual and affable manner imaginable and led me off in the



direction of the trees. At least this was a more friendly reception than the mining colony had accorded me.

There was a well-worn path leading through the trees and this we followed till we came to a clearing in the woods. This was occupied by a cluster of buildings, half-wood, half-stone, and all built on one storey. There were no windows, but as we approached I could see a gap of perhaps three feet between the top of the walls and the roof, which was supported at intervals by heavy wooden beams. We made for the largest of these dwellings and passed into it through an open doorway. I found myself in a high-roofed room smelling cleanly of wood smoke. It was sufficiently, though not well, lit by the gap in the top of the walls. From it doors led off to other parts of the house. "My living room," said Smythe-Cooper-Smythe. He called off through one of the doorways: "Eve. We have a guest for dinner." Then he turned to me. "We don't bother to dress." "That," I thought, "is obvious."

The room contained some comfortable, well-upholstered armchairs. He told me to sit down and make myself at home, which I did most willingly.

Suddenly one of the doors opened. We rose to our feet. "This is my wife, Eve," said Smythe-Cooper-Smythe. "How do you do?" I said. "How do you do?" she replied, in accents straight from Mayfair. I was goggle-eyed. She came towards us with a tray holding two glasses, but it was not at this I was looking or trying not to look. She was dressed exactly as her husband, except that she had forgotten the tie. I'm no prude, but . . . well, I was taken a bit off guard.

She handed us a glass each and disappeared to finish preparing the dinner. For a moment I was speechless. "Pretty gal, isn't she?" said Smythe-Cooper-Smythe. "Wouldn't find many like her back on Earth." It struck me that she might have caused quite a disturbance on Earth, but I didn't say so. "Isn't she . . . ?" I began. "No.

Pure Homobarian," he said. "They're remarkably like us, as you no doubt noticed."

It was not long before Eve called to us from the next room to tell us that dinner was ready. I followed my host into a great barn of a room that might have been the copy of an old English baronial hall. A great wooden table ran the length of the floor and four places were laid at it. The fourth place was for Eve's sister, a really charming girl of even greater beauty than my hostess. She, also, had omitted to dress for dinner. What with one thing and another I was hard put to it to do justice to the excellent meal put before me.

After dinner Smythe-Cooper-Smythe and I retired once more to the living room, where we were soon joined by Eve. Her sister, whom my host had rechristened Sandra, her native name being almost unpronounceable, brought us a drink that bore a faint resemblance to coffee.

They were eager to hear of the doings beyond their world, and after my first shyness had worn off I conversed freely and easily with them. It was not long before I began to feel that it was my clothing that was anomalous. On my part I was equally anxious to hear of the world I had chanced on, and it was well into the night when I announced my intention of retiring to my rocket to sleep. My host and hostess would have none of it and insisted on my staying with them, assuring me that it was no trouble and that they were only too delighted to have me. As Eve and Sandra bade me goodnight I was sure that I spotted a look in the latter's eyes that bespoke more than ordinary interest. I think it was then that I decided to make Homobar my home.

Once more Smythe-Cooper-Smythe and I were left alone and it was then that I put the question that had been bothering me all evening. "Why?" I asked, "do you still keep the tie?" He lifted it from the hair on his chest

and gazed at its large blue, white and green diagonal stripes. "At first it was purely out of affection," he said. "Now it's my badge of office." "Badge of office?" I asked. "Yes. As Prime Minister. They soon realised that a man who was capable of flying through space was their superior, mentally. At first they asked my advice. I gave it them. Soon I became their sort of unofficial oracle. It was not long before the position became official. From there events followed a logical course and now I am ruler of virtually the entire planet." "I see," I said.

I pulled my own tie away from my shirt and inspected it. It was a little frayed here and there, but in fairly good condition.

"Er . . . I seem to recall the colours," he said. "But I can't for the life of me remember . . ." "Old Grimaldian," I said. "Oh, yes, of course."

"As a matter of fact I was wondering . . ." "Old Grimaldian," he said. "Could have been a lot worse. Of course, we always beat you at rugby, but I believe you used to get the better of us at cricket. And your brother was a good chap."

"I was wondering . . ." I began again, fingering my tie and thinking vaguely of Sandra. His eye fixed on my purple and yellow stripes on the white background. "We could do with a foreign secretary," he said. "With all this increase in interstellar exploration we'll be needing a man with a knowledge of the outside. You may not be an old Broadboroughian, but you're the next best thing."

A tie may not be everybody's idea of sartorial perfection, but believe me, it is all that is required in this perfect little world. Hoping to hear from you by return rocket.

Yours sincerely,

DOUGLAS.

(Sir Douglas William Waterman-Jones, Hon. Order of Homobar, Knight of the most noble order of neckties, etc. etc.)

PLANETARY

I

STARTING LIFE ON A BRAND NEW PLANET WILL NOT BE EASY, BUT IT WILL HAVE COMPENSATIONS

Yes! We have arrived. All the real problems have been solved, all the imaginary 'it's impossibles' have been proved false and there before us lies a gleaming orb. We have the Sun behind us. Away over there is a little bright spot called Earth, shining in the blackness of space. All the facilities it can provide are either with us or left behind. If there is anything we need among the left-behinds, it is too late now to find we could use it. What have we brought?

Firstly, at least one camera. We shall want to know the lie of the land, hills, mountains, valleys, ravines and plains.

PHOTO RECONNAISSANCE

Aerial photographic reconnaissance will be a first must. One of the many examples of good which it took the dominant evil of war to produce was the great progress brought about in the development of many scientific techniques. Whole libraries of hundreds of thousands of photographs were taken covering many times every significant inch of enemy-occupied territory. We shall need similar cameras so equipped that each negative is automatically stamped with the time at which exposure took place, altitude and focal length of the lens used. The pictures cover overlapping tracts of terrain so that they can be examined in pairs stereoscopically and handed over to the mathematically minded topographers to produce from them accurate contour maps. There at

EXPLORATION

..... OPENING UP

HERE **THOMAS BOND**, A WAR-TIME WORKER IN THE PENTAGON, TELLS ABOUT THE EARLY STAGES IN MAN'S ATTEMPT TO CONQUER A PLANET.

once we have three old terrestrial measurements to be considered in our new location.

The *time* at which each picture is taken is important because from it we know the relative position of the sun at a given longitude and latitude, and hence the length of shadows thrown by objects of a given height. Before our journey started the Astronomer Royal of our time will have been able to get his boys and girls—working on the artificial satellite observatory—to establish an equator and an axis of rotation for our planet and solar inclination tables for our reference. No small job of work, even with the aid of such calculating devices as will then be available. We will have quite a good mechanical mathematician aboard. It will have among other

duties, the job of maintaining an uninterrupted record of our position with reference to the equator and poles of our planet for the duration of our reconnaissance cruise.

The *altitude* from which photographs were taken will also be a factor in the calculations which will produce the maps and again a new type of measurement of distance of war-time development will be useful. Obviously an altimeter of terrestrial navigation type will be useless. It depends upon atmospheric pressure. Our planet may not have an atmosphere. And if it has, it will differ from ours in depth and composition in such a way that any accurate prediction of its nature will be unlikely before we start our journey. It will not be possible to construct an aneroid barometric altimeter.




Night fighters were equipped with radar devices which give direction and range of enemy bombers on an easily translatable dial marking. Shells were equipped with fuses which picked up an echo to set a mechanism in motion which brought about a burst on the very dot of moment of impact, or nearest proximity in the event of a miss. It will be possible with a modification of such equipment to establish the distance from the ship to the nearest point of the planet. This, of course, will not be the same thing as altitude. Any self-respecting electronic brain will be happy and proud and vastly intrigued with the job of correlating the photographic record and the radar heights to establish a surface norm for the planet corresponding to mean sea level on Earth. It is improbable that there will be oceans of water on that planet, but if there are, what pretty play will there be for someone working out tides for a planet with more than one satellite!

One other general surface survey could be made before landing, provided we have brought the right instruments with us. It would be very useful to know as much as possible about the temperature of the surface of the planet at as many points as possible at various times of the planetary day. Conceivably this information could be collected as a continuous cruise record, possibly automatically recorded by means of a thermo-couple pyrometer adequately sensitized, or by some better device yet to be invented.

INSPIRATION FROM THE PAST

Provision of navigational aids has always been one of the geographer's ways of serving mankind. In this instance those served have well repaid their servants. The great mariners, Cabot, Magellan, Cook, Drake were all geographers. If you have not already done so, go to a Maritime Museum and take a look at the Astrolobes and chronometers. These museums are





full of exquisite examples of the skill of the instrument makers and the mathematical competence of early geographers. There you can let the inevitable imagination of the science fiction reader re-create for you the atmosphere in the Captain's cabin of one of those who gave us continents.

Yes, they made a lot of fine instruments and used them to great purpose. The Devil of the North lodestone compasses the Phœnicians are said to have brought from China got into the hands of those ancestors of ours, the Vikings, and one thing led to another. The conquest of space calls for the same qualities of Viking high courage and Elizabethan industrious application of knowledge and intellect.

With the lodestone and the compass, the geographers of Earth could go anywhere with at least one reasonably reliable ally. If our planet has no atmosphere we shall be able to move freely over its surface by astral navigation night and day. If it has some atmosphere which produces clouds we, too, will need a compass, but we shall not be able to land and use it with much certainty unless we first get a knowledge of the magnetic field of the planet and locate its magnetic poles with reference to the axis of rotation and equator which we may have been able to establish before embarkation. Conceivably, we might find that the planet has no magnetic field at all, or one so feeble that a magnet such as we normally use in a compass would be inadequate.

MAGNETIC SURVEY

It would be possible, given a cloudless night, on a planet with an atmosphere, to fly over it plotting strength and direction of the magnetic field, checking position by observing the stars. The lower we are able to fly, the more accurate our information will be when it comes to plotting magnetic maps of the surface. But remember we have not yet got accurate contour maps

of the planet nor an established altimeter. Low level flying at night in such a state of ignorance will be altogether too chancy for efficient space mariners. Possibly a fairly accurate picture of the planet's magnetic field could be obtained at any time of night or day from outside its atmosphere where the stars could be kept under constant observation. It is certain any travel on the surface will be meaningless wanderings unless some means is first prepared by which to know in what direction we are travelling, unless we move only on clear nights, seeing little, or on cloudless days armed with very complete data as to direction and inclination of the sun at all points—and a chronometer set to keep time on a dial related to the particular planet's own day. We could very well find that large parts of our planet, or even all of it, may lie under permanent cloud, and clouds not necessarily consisting of condensed water vapour.

Possibly we shall have in our possession all manner of instruments and much theoretical knowledge at present unknown, which may make some of our navigational methods obsolete, but we shall still need the maps and some sort of grid reference to fix points in our new realms.

NOMENCLATURE

Early terrestrial geographers had a lot of fun naming geographical features. You can go down the east coast of South America and meet places named in order of the occurrence of successive feast days in the Church calendar and thus know how long it took the first name-givers to make their journey. Possibly we shall get a crop of sturdy space pioneer settlements named to correspond with wild western townships—Rocket-Wreck Ravine for Dead Horse Canyon—H-Blast Hollow for Pistol Creek. Or shall we have become so systematical in our outlook that by then we know all things by serial

numbers only? A/41/Alpha 35 may stand for the Cape of Good Hope, or maybe the Friendly Islands. The South American Saint's Day sequence gives anyone who knows the calendar a ready way of knowing which place lies north of which, and the serial number could convey quite a lot of information to one trained in its conventions. More important, it could feed into an electronic brain, and if we want romance—why, even our machines already have their nick-names and I have yet to meet an efficiently intelligent man of the type likely to pioneer space, given the chance, who is without some kind of nonsense, flippant, whimsical or pseudo grim!

In more serious vein, there are many unknown and part-known forces waiting for us in space. I have tried to limit the points here discussed to the field of the geographer as it is now understood, but already cosmic ray concentration represents a new variable in the consideration of the nature of things at various places on the Earth's surface. We know that Tibetans endure more, and indeed thrive best on more, exposure to cosmic particles than a dweller by the Dead Sea gets or would be happy getting. In our space journeys we shall possibly need a vessel that gives us protection against uncushioned cosmic radiation, at least until such time as we may take to develop an immunity against it or even make it a physiological necessity for our maximum well-being. On our new planet we will be interested to know where and how cosmic rays are reflected by the nature of its atmosphere, possibly even its geology.

Finally, every advance in the geographical exploration of the Earth added to our knowledge of facts and, therefore, to our theoretical knowledge; perhaps when we know the magnetic fields of other planets we shall know the true cause of Earth's magnetism. It is possible that, after one look at another planet, we shall bring back information which will tell us more about our own!

*A masterpiece in miniature . . .
by the world's most famous
science fiction personality . . .*

Forrest J. Ackerman
of Hollywood

THE MUTE QUESTION

TWINHEAD was puzzling over the old problem. "Do you think," he reflected, in the queer lisp that was the heritage of his cleft tongue, "that Man could have made mutant in his own image?"

His acquaintance of the twilight hour vouchsafed no opinion.

The mutant's second head arched its neck forward from the cave wall against which it rested. With its twang, characteristic of its double tongue, it argued: "But if Man's son, Adam, created us all with the Adam Bomb——?"

"I don't hold with that Bomb birth story," his opposite head lisped in negation. "Do you, stranger?"

Still the stranger did not respond; why, it could not be directly discerned, for it was very dark in the cave.

Twang-tongue declared: "But for Man to have made mutie in His own image, He would have had to have been a polymorph! Part of Him would have had to have been two-headed, like us, and part like our Siamese sisters and part like little Roll Ball and part like Octo-arms we met last week and part like the Centi-Feet and part like our cousin, Snaky. Why, He would have been a monster! Don't you agree, stranger?"

In the dark recess of the cave the stranger stirred, but still no sound issued from his direction. And so this philosophical discussion of the late 1990's stalemated itself.

Then the moon's clouded rays, slowly, as though fearful of what they might reveal, crept into the cave.

The wandering shaft moved hesitantly up the misshapen body of Twinhead, and at last reluctantly illuminated the entire mutie. Was it an illusion, or did the face of the Man in the Moon pale? There was no man left on Earth to tell.

The beam's slow progress continued, until the second mutie too was visible. Then it became evident why this stranger did not speak.

Rather, it must be put this way: It would have become evident had there been a man there with eyes to see. It remained a mystery to Twinhead for, though he had more than his share of eyes—six to be exact—they were all albino white, pupilless ovals of jellyfish flesh that failed to function. Twinhead, since birth, was blind.

And the stranger—well, he was silent because . . .

The Muties have a proverb: Two heads are better than *none*.



Suppose you met a man in a Flying Saucer . . .

by E. C. TUBB

ONE DAY it will happen. Someone, it may be you, will be the first terrestrial to greet a visitor from space and that meeting will be the most important event in the entire history of Man. For the first time we shall have met an alien in the truest sense of the word—someone without any of the inescapable attributes to be found in any man of Earth. Such a meeting will be more than just two representatives of different races coming into contact for the first time. It will be a meeting of two cultures, two ideologies, two sciences, even, perhaps, two entirely different ways of thought. Such a meeting could form the basis of common understanding and mutual friendship. Or it could lead directly to interplanetary war.

The choice could depend on *you*.

You think that is unlikely? You think that planets would not go to war because of what *one* person happened to say or do? Nations have done it; why not planets? Maybe these aliens start off with friendship; their envoy comes in peace and pleasure. But if you, so to speak, start off on the wrong foot, he may go back to his superiors with an unfavourable report. Their attitude may change and when full contact is made, stubbornness on either side may lead to the kind of war you only meet in bad dreams. When you meet an alien, you are not just you any more.

You are a representative of Earth. What you say and how you conduct yourself will be of immeasurable importance to any extra-terrestrial visitor and to the whole of this world. He will base his opinion of the human race on *you*. What you do or say may well determine the future of our planet. So—what would *you* do if you met a man in a flying saucer?

As with most human actions there is always a choice of three alternatives: two positive, one negative. You can do nothing—negative. You can advance—positive, or you can run—again positive. You have also a built-in mechanism which automatically takes care of your survival. When you are faced with danger—you run. The trouble is that to your instinct “danger” also spells “unknown,” “unfamiliar,” “alien,” or “unrecognised.” A savage will run from something he cannot understand. But *you* are not a savage, so the first thing would be to master your primitive instincts and use your intelligence.

The first meeting could take place in several different ways. You could see the saucer land, you could see it at rest, or you could just meet the alien. Naturally, in this context, we are using the word “saucer” to cover the generic term for any extra-terrestrial vessel and “alien” for its crew member.

Suppose you see it land?

Modern aircraft have made you familiar with the whistling roar of displaced air so that the sound alone

would be nothing out of the usual. Perhaps you would stand and watch the smooth, unfamiliar shape settle in a nearby field. It would come to rest and then, as you watched it, the first inclination of what it was would strike you! For spaceships cannot resemble aircraft. There might be no need of wings; the body would be large and completely sealed, the method of propulsion would be other than jets or propellers. Perhaps there would be venturis or some form of electromagnetic-gravity controlling force. You don't know, but, watching the strange ship land, you could guess that it had been built by no terrestrial hand.

And here is where *you*, as a reader of science fiction, will have a tremendous advantage over the rest of the population. For you will have exercised your imagination and, faced with reality, you will not deny it merely because it is unfamiliar, impossible, or out of your immediate experience.

The saucer has landed and now you are faced with what to do next. You could freeze, just stand there like a stricken rabbit; you could run away from the scene, desperate with fear of the unknown. Or you could compromise, take cover and watch the visitor and so combine the best of two alternatives. So you would hide, shelter behind a tree or some other cover, and watch to see what happened next.

Having landed, the obvious thing is that the crew member would emerge. A port would open, perhaps a ramp descend, and our extra-terrestrial visitor would step on—to him—alien soil.

And the next move is up to *you*.

For a long time, perhaps, you would watch him. You would see that he is much like yourself in outward appearance, that he has a head, two eyes, hands, walks upright, wears some form of clothing and, perhaps, is carrying some form of weapon. You can assume that since he has landed he desires contact and, as this is the first time a saucer has landed, he is naturally wary and on his guard. You could

leave him there, and, using utmost caution, you could retreat and run away. Or you could advance and present yourself to your visitor.

It would have to be done carefully, of course. No sudden moves or sharp gestures. You must always remember that you are on familiar ground but to him everything is strange and potentially dangerous. So you would step from shelter, stand for a while until you were certain that he had seen you, and then move slowly forward.

It would not be a good thing to smile! A smile is basically a muscular contortion which bares the teeth—and baring the teeth in the animal kingdom is rarely indicative of amusement. You must always bear in mind that the common assumptions we are always making in our dealings with others of our own kind do not now apply. You can take nothing for granted. You *dare* not!

So you advance, hands held away from your body to show their emptiness, and you halt a few paces from the alien. For a moment you would stare at each other, each frankly interested in what you see, and then



would come what may prove to be the hardest barrier.

The problem of communication.

The alien may know our language—and then again he may not. As this is the first landing it is reasonable to assume that, even if he has surveyed our world and learned English by means of radio and television, he still wouldn't have any knowledge or experience of idiom or ambiguous statements. In either case the first remark must come from you, and what you say could be the most important words in history, for, from what you say, he could gauge the intelligence level of your race.

"Hello" is meaningless. "Who are you?" is better but not good enough. "What do you want?" is terse and unfriendly. Your opening remark, understood or not, is going to be important, for, later, when he has learned the language, he will remember it. So you must pick a phrase at once unmistakable, friendly, and yet put so that it shows your understanding and intelligence.

"Could I help you?"

An offer of assistance, a recognition of the fact that he may be in trouble, an acceptance of what he is and a calm, intelligent proposition between equals. He may answer and then again he may not be able to, but you try again.

"Where are you from?"

Again an intelligent assumption that he is a traveller, that he has come from somewhere else, and a question for your own guidance as to where.

If still silence you can assume that he doesn't know our language or, if he knows it, he is waiting to see what else you will say or do. So you put the question direct.

"Can you understand me?"

Now he must answer, either by admitting he knows what you are saying, or by continued silence—which is information to you that he does not understand, or uses some other means of communication than sound vibrations. In either case you can go one

step further and use what must be a universal method of communication.

You make marks in the dirt!

Writing, to any race able to build and operate a spaceship, must be basic. The mere fact that you too have that knowledge will prove to him that you are not an animal making uncouth sounds. The diagram will be simple; a schematic drawing of the solar system, the sun, the planets and their moons. Simple signs—pointing at the ground and ringing the third planet, pointing at the sun and marking the central orb, will tell him that you have both a knowledge of astronomy and science. You can go one step further and display simple mathematical symbols; one dot followed by a line; two dots followed by the figure 2, and so on up to ten.

If he could understand you and had some knowledge of the language it would be even simpler. You would follow your opening remarks with others, always keeping them simple, direct, and intelligent. Babble such as: "Had a nice trip?" "Is that a spaceship?" or "Can I have a ride?" would only betray your limited intelligence and your inability to extrapolate from available data.

Once you had welcomed him and convinced him that terrestrials were intelligent, understanding people, you could then notify the authorities of his arrival. This is if you had time. Of course, the saucer may have landed just in order to make first contact and their mission was completed when you stepped forward.

And suppose that it *does* happen to you?

Are you sure that you'd know just what to do? Because really, it's very simple as well as being very important. Would you run away, desperate and afraid? Or would you treat the alien with kindness, courtesy, intelligent understanding and acceptance of equality?

I wonder?

Because, you know, it could happen tomorrow.

THE LENS

by H.J.C.

LIKE many simple but important devices, the lens has a history that is obscure. We cannot say who made the first lens. Seneca, tutor to Nero, observed in the first century that a globe of water magnified, but this could hardly be claimed as the first step in the story of the lens. Anyway, Seneca never did anything about it. The next mention of lenses is not found until about 1200 years later—in 1276, to be more precise—when our old friend Roger Bacon showed how they could be used and vaguely suggested that they might be useful for old people with weak sight.

However vague Bacon's suggestion might have been, it nevertheless seems to have been acted upon, for the very earliest mentions of lenses after his day all deal with the spectacle lens. It appears that round about the 1600's, Holland especially was choc-a-bloc with spectacle makers, several of whom have achieved lasting

fame. Certainly the wearing of spectacles was a fashionable fad among the rich Dutch merchants and their wives. Many of them had nothing whatever wrong with their eyes, and wore spectacles with plain glass just to be in the swing. Like gold teeth today, spectacles in seventeenth century Holland were more of a sign of wealth than a useful or necessary adjunct to the body's health.

Still, no doubt all this patronage of the spectacle-making art served a useful purpose in the long run, for it enabled people like Antony Leeuwenhoek and Lippershey to devote their time to what was, in effect, the beginnings of optics. This is a factor that crops up time and again in the history of science; the rich man's idle pleasure provides the money for really important advances—though the rich man doesn't usually know it and probably wouldn't care if he did.

Lippershey we have to thank for his idea of looking through more than one spectacle lens at the same time. This may not seem much of a clever idea to some of us today, but it does appear that Lippershey was the first man to think of doing it—in 1608—with the result that the world acquired a new instrument, the telescope. Lippershey, after seeing that a couple of spectacle lenses, held the correct distance apart, could make far objects look near, put them into a tube and sold them as novelties. So was started another fashionable craze!

Once again, wealthy patronage had the effect of making more and more of these "toys" available. They were expensive, of course, for every lens had to be laboriously polished by hand from rough glass, and years of training were required before anyone could do it. But sufficient of the revolutionary instruments got around to bring them to the notice of Galileo. He heard about them in 1609 and made one for himself. We all know now how he came to discover some of Jupiter's moons with it. And so the telescope became an instrument in its own right. The lenses were improved and the

design perfected through many thousands of similar instruments right down to the present world's largest telescope, the 200 inch reflector at Mount Palomar. If only that old Dutchman, Lippershey could take a look at *that*!

The other Dutch spectacle maker who achieved a noted place in history, Leeuwenhoek, worked in the reverse direction and developed the microscope. He was a most accomplished lens-grinder, probably the greatest of them all, and yet he did not grind his first lens until he was thirty. Soon he was producing perfect specimens only one eighth of an inch in diameter. With a series of these small lenses, he found that tiny objects could be made to look large, and—most startling of all—invisible objects could be seen. It is not surprising that some people, reading his descriptions of hitherto unknown objects, thought he was mad. Even the presumably open-minded members of the Royal Society must have shaken their heads a little at some of the claims in the long, gossipy letters he used to send them.

Up to Leeuwenhoek's time only single-lens magnifiers were available. These could make a sixpence look like a

shilling—not much in the way of enlargement. But Leeuwenhoek's microscopes, though frightfully crude compared with current models, magnified hundreds of times. Until he devised his instrument it was thought that the smallest creature God had made was the cheese-mite. Leeuwenhoek changed all this when he demonstrated the existence of bacteria. Incidentally, he was also the first man ever to see capillary blood vessels.

So we could go on, tracing the diverging paths of the instruments that have been developed from the lens—in-

struments that have played an incalculably vital part in the gathering impetus of scientific progress. Think of them: camera, binoculars, theodolite, sextant, ophthalmoscope, spectroscope, polarimeter, cinema projector, planetarium projector, range-finder, and so on, and so on, *and so on!* Without these things there would be no photography, printed illustrations, surveying, navigation, spectrum analysis, movie films, etc. The lens is such a simple thing in essence—just a bit of curved glass—that few people realise how different the world would be without it.

THE LESSER BREED

is the title of next month's thoughtful but fast moving lead story by Dan Morgan. It is supported by a brand new William F. Temple story, *Man in a Maze*; another E. C. Tubb gem, *Nonentity*; and a soul-shuddering piece by Eric Wilding, *Death Wish*. There will be more articles and features and, of course, another fully-illustrated supplement.

AUTHENTIC—A MONTHLY MUST

It happened in Australia
and it could happen all over the world if
the spacemen bring back—

A PRESENT FROM MARS

by MARTIN JORDAN

THE cleft was three-sixteenths of an inch high and three inches deep, formed of an angle between two pieces of timber resting against the bulkhead of the grounded spaceship. They were bits of Martian timber—specimens—the only bits of timber aboard.

Inside the cleft it was warm, dark and pungent. Twenty-three cylindrical eggs were cemented to a brown shake in the timber. An adult female—a being yet to be observed and classified by man—a female with distended abdomen and proboscis withdrawn beneath the thorax, lay motionless beyond the eggs. Apart from a vague movement of her feelers in answer to the vibrations of footfalls about the ship, she had not stirred since her last meal, five days since. Nearby, the moulted skin of a nymph reared like a live thing—a brown husk, dead and perfect.

One of the eggs shuddered. Gradually the first spasms of undirected movement became the tactics of an embryo; a violent purposiveness convulsed it. Blue with indigested blood, the female watched the perils of the birth—saw the egg undulate as a more than regal temperament clawed at it from within—until the silent egg seemed to be full of wild cries, and, with something of the triumph of discovery, a pair of mandibles shot out, the hinged lid opened . . .

Thursday. 10.00 hours, G.M.T. (Hope that's O.K. Our three chronometers synchronise to a microsecond, but what if the FIELD has jixed all three? That would be as impossible to detect as Einstein's shortening footrule . . . the theoretical one that gets SHORTER as your speed approaches that of light.)

Only three more Earth-days, Maggurt says, and we'll be

OFF! Luna first, for the refuel, and then . . . glory. San Francisco. I shall be passionate, and afterwards sentimental.

Mars is junk. We've ridden the planet all round its orbit, and what have we got? A few terrestrial-type minerals. One or two bits of coniferæ. A spec-box of bugs you could catch inside your front door if you lived east of Asia Minor.

Last night I was bitten by a bug or something. Right here in the ship. Looked in the spec-box, but the captives were all present. THE MARTIANS? We half expected bug-eyed monsters. All we got were bugs.

Five minutes later it was over. An etiolated larva lay and trembled; then, overwhelmed by reaction, fell into a stupor as deep as the darkness of the egg. Dusk crept in. The bloated female looked at her offspring without curiosity. A whisper as of dry leaves disturbed the sparse molecular population of the air—the long night was coming.

Later the larva felt force—a namelessly desirable force—informing every joint. The feeling grew. It was not so much a compulsion pushing from the past as an instinct

pulling from the future. Like a marionette it went on immature legs to the opening of the cleft, groped over the gulf and began a slow descent of the timber.

Excitement ruled it. The molecules of air seemed to breathe and speak as it grew aware of imponderable stretches of blackness, packed tight with danger and desire. It suddenly knew its fellows. Now a disc-like nymph would pass, bearing high a flat abdomen, or a gorged adult, looming and vanishing on ponderous legs; and now a group of other larvæ could be seen, clinging to the wood with their sharp feet, themselves a prey to the insistence of a nameless want.

The larva paused. Its feet tore at something soft. At once its purpose narrowed; a pattern of reflexes was revealed to it in rhythms crowding from the future. It reached a region of warmth and pulsation, felt a familiarity in something never experienced...

At the summit of human flesh it unsheathed the proboscis and struck and sucked. Hot blood cataracted into the belly with a sensation intolerably sweet; the stomach walls stretched elastically. Re-

leasing the red proboscis, it turned slowly and with a deliberation born of repletion discharged into the wound the excrement of its embryonic life. Then, puffed and languorous, it half crawled, half fell from the sleeping body.

Saturday. 15.00 hours, G.M.T. I keep on getting bitten. But tonight we are OFF!

An irritation, and then a paroxysm. A calvary of pangs, a wrestling with the stuff of its own fabric. And suddenly its husk was empty, and beside the dead epidermis of its babyhood a new being lay exhausted. The larva had become a nymph.

SPACESHIP MARTIAN, Bulwyn K. Maggurt, Commanding. Date: 20th January, 1993. Time: 2200 hours. Computer indicates take off 2200 hours 15 mins. 20 secs./safety lap 90 secs. Repeat we are resting on shocklegs in position occupied since landing (approx centre Mare Erythræum). Have no casualties.

P.S. Except biologist (Britten) who complains insect bites, also navigator (Sludd), mineralogist (Stratton). Blood tests negative.

P.P.S. Can't find insects aboard, except boxed specimens, WHICH HAVEN'T GOT OUT!

The ship's vibrations, always intermittent, took on a deep and constant note. His nest shook—he could feel the strain on his claws. Then something smashed the roof off his world and the sense from his universe. Light pounced as he froze himself to the wood, drunk with dazzle.

Another shock went through him. He lumbered from his squatting place, neckless head turned from the light, and walked into warm matter. It was a female, split open. A lake of black blood came from her. Even in his fear he found it impossible to resist the food; well-being flowed back as the blood tightened his belly. But the instant of his satisfaction was followed by queerness. He found it hard to stay near solidity; found himself slipping into the gulf of the air, weightless, yet falling . . .

MARS CONQUERED!
SHIP DOWN—ALL WELL!
ONLY PLANTS AND INSECTS—
SKIPPER.
FROM Chesney Bonard,

CALIFORNIA TAPE'S own correspondent on Moon.

Lunar Base, Friday—Space-ship Martian landed here safely this morning and will blast for Earth today! All the crew are safe, and the thoughts of everyone on this historic . . .

MARS-MEN BACK!

MILLIONS CHEER SHIP.

FOUR SENATORS CHAIR SKIPPER.

The star danced. He was music itself, coagulated into hat and cane, a spidery extension of the tune, scattering seeds of rhythm with the split-hair reluctance that rises out of competence into miracle. He lifted the music roofward on patent leather, poised himself in interminable half-second silences. The brass rose; he was not weightless, after all—his centre of gravity (somewhere between top hat and tails) proclaimed the music; his weight *was* the music's—his body's weight, that is, and the weight of the small and squidgy head, with its crushed-in cockiness, like a *gamin* deeply sunk in a sophistication utterly professional.

But something was wrong. He hesitated. The crescendo wavered and finished self-

consciously in a honk. For there, in the very height and ecstasy of the number, he had scratched with his fingers at his own ribs—not with a wholly apelike unconcern, but uncontrollably and with blush-faced seriousness. A white glove dropped into the orchestra pit . . .

ARE YOU SWEET?

The Sweeter You Are The
Better They Like You.

Try BRIMSTONE'S
BALSAM

for those angry bites today!

"Well, sir, what did you think of the ball game? Why, sure. Always two schools of thought about the Semesters. Guess you can count on them to fight to the last spectator.

"Little woman sure did appreciate that autograph picture. Thanks a lot. We seen your show three times.

"A little thin on top, sir. Try GRASSO. Nothing like a good growth for making young looks. See there, it's sponsored by one of them spaceship guys—it's on the bottle.

"Been on vacation yet, sir? Why, yes—Florida. Guess I'll try Vermont myself. Fault with Vermont, the weather's fickle. Only one thing less

predictable or more talked about, and that's a dame. What's that? Bugs? Well, everyone's got 'em, I guess. Try a drop of GRASSO. They hate the smell."

A man called on behalf of some poll or other. Did she think DDT preparations had done good? After that, someone brought a free coupon for QUICK, the latest deterrent, smiled apologetically, scratched himself and scurried for the elevator . . .

During the morning she watched the telecasts. A scientist and a deputy governor talked about them. Everything apparently was under control. It was just one of those freak happenings that hit the world sometimes—like freak storms. Only this was not meteorological, but biological. The politician said it would all be over in a few weeks, thanks to the disinfection setup.

She stirred in her plastic coverall, which was zipped up to the chin. In addition she wore oilskin jeans tucked into storm boots and a head-scarf. It was hot; her skin prickled, and she panicked, thinking . . . perhaps . . . If they got at her she would scream. *Scream*. Nothing would stop her, not even the thought of the baby.

The V-phone rang. It was Johnnie to say he would be late at the theatre.

"Come home," she pleaded. "You O.K.?" he asked, anxiously.

"I . . . guess so."

"Honey, I can't make it. It's a matter of saving the show. I've been on long distance all morning. We want to seal the floor with bitumastic; that's where they come from. Only there isn't any bitumastic. Everyone's onto the idea; it's a nation-wide hookup."

Meanwhile the telescreen was singing:

*You're my moon and stars,
My trip to Mars,
My hyper-drive to heaven . .*

When she hung up she was crying.

*Teletape. (Restricted.)
PRIORITY.*

Circulation: Standard.

*Follows condense of Central
Research Lab (State Dept.).*

Report on infestation.

I. IDENTITY. Organisms similar to hemipterous family (order, Hemiptera; suborder, Heteroptera). Bear nearest resemblance to Cimex Rotundatus, oriental type of common bed bug. Basic type isolated. This type organised for wood-

pulp diet, but seems acquired vampire trait recently. Of units examined, half found to be mutational. Mutation lies in genital equipment. Mutates breed over twenty times as rapidly as basics. Apparent switch of basic's dietary from wood-pulp to human blood may itself be mutational. Two individuals were found to exemplify further possible mutation, in that their size had increased by eighty per cent.

2. *EXTENT.* Infestation present throughout United States. Greatest concentration in California. About thirty per cent. dwelling houses, apartments, etc., in San Francisco evacuated pending disinfection. Partial disruption of city services. Evacuations in other cities, including Chicago and New York, average twenty per cent. Reported infestations in Canada, Southampton (England) and Hawaii. Casualties in U.S. average fifteen hundred daily—mainly nervous heart failure following extensive attacks.

3. *ORIGIN.* Origin unknown, but as invaders not identical with the cimicidæ or any hemipterous earth-organism, extra terrestrial origin considered probable. As long established (a) that Venus is uninhabited

poison-planet; (b) that no Moon-life exists; Mars remains only possibility.

It was a boy. He slept in his cradle now, and she sat in the living room with Johnnie, listening for the baby in case he cried. She still wore the plastic coverall and rubber boots; Johnnie had bicycle clips, like everyone else wore these days, and elastic let in to close his cuffs. The smell of pine disinfectant helped to kill the pungent and oily presences in their apartment.

At first people had smote and crushed for themselves. Then most had stopped, still disgusted and terrified, but made despairing by the sheer strength of the invasion. Besides, there were the Disinfestation Units—white painted vans whose prying suction tubes crept like tentacles into all twists and orifices of buildings, so that each vehicle would roar away with two thousand cubic feet of solid bug for the destructor. But it was clear soon that the vans had failed. *Cimex Martialis* had claw feet capable of withstanding a gale force higher than the current plant could muster. Then the vans quit sucking and blew. Tons

of DDT tore through the fabric of the cities . . .

And still *Cimex Martialis* thrived.

She said: "If only we could camp."

"There's nothing to it. They still go wherever folks are."

"If we had more light . . ."

At first there had been a rush for flex and bulbs, for more light meant less *Cimex*. Then the power stations in most States began their load-shedding; federal orders clamped down on wattage . . .

She looked at her husband. He was a figure familiar to millions—the personification of top-hats and tails. He was small-looking and bewildered. He had never, until now, found a world where the best joke was stale and no one wanted to dance.

She looked at the pretty wallpaper. On it the identical files of bugs were like traffic arteries, slow moving; there were road junctions—ganglia that almost seemed controlled.

She was past shuddering. She went into the nursery. The baby was sleeping. His face was tiny and red, and five bugs were clamped to it—three on one cheek and two on the other.

She picked them off and

covered his face with butter muslin that had cost ten dollars a yard.

TOP SECRET AND PRIORITY.

President.

Preliminary report of Entomological Committee led by Professor Kenn L. Sigsbee, received. Quotation:

The conditions are unique. As Martian origin of invaders is now established (on evidence of Cdr. Bulwyn K. Maggurt and spaceship crew) certain novel factors arise. We cannot look to terrestrial genetics for any precedent.

A well-known phrase which mirrors a fundamental of biotics is balance of nature. Terrestrially this means that any tendency of species towards world-infestation is countered by a complexity of natural enemies. Among terrestrial species this balance always asserts itself. The reasons lie in the conditions of our planet; the same conditions which give birth to a species afterwards serve to control it.

What has happened? An alien life-form has been brought from Mars. Possibly this might have been harmless; possibly it was just a sad chance that THIS PARTICULAR life-form should

have been brought. But in the result, the biotic balance of our planet has been destroyed. A law of nature has been violated—a law which few realised existed—a law which says that the balance of nature is only valid for a given planet. Worlds cannot mix!

The bugs landed on Earth, and the conditions they found were so intensely favourable that an uncontrollable gush of creativity followed. On their home planet their evolution had been based mainly on chromosomal aberrations and gene fluctuations in relation to environment. We substituted a new environment. Not a controlled laboratory environment—an uncontrolled one of planet-size! There is no knowing when the spread of bugs will stop. Perhaps, never.

"Now I haven't any public," he said.

The months had shrivelled him. Once he had been assured of eternal youth—if a little thin on top. Now old age had taken one stride and claimed him.

She said: "Everyone has a job getting rid of them."

The bitumastic had not kept out the invaders, and now the theatre had been

abandoned to the oily, mahogany coloured discs.

He looked at her as she washed the baby; saw the bugs drowning in the bath, his wife's chapped cheeks and starting cheekbones, and remembered their embraces. They didn't embrace any more—few did. The bugs were barriers against love.

And under the windows, along the sidewalks, went people—thousands of people—pushing perambulators and lugging tarpaulins. The nomads.

They wandered mysteriously from nowhere to nowhere—gangsters, city men, clerks, shabby people from tenements and smart people from park-side apartments. They kept moving. At night they slept on black, the soil outside the city limits under the stars or in the rain. And often at night they got up and kept moving.

My name is Kenn Sigsbee. I am a professor of Entomology, and I live in a hole in the Rocky Mountains. I am sixty-one and I guess this way of life will kill me in not less than three years.

There was a man with me—

a young man called Edgar Britten, who was in my class at Yale and was the biologist on Spaceship Martian. He's dead now. He claimed to be the man who brought the bugs from Mars. He killed himself with responsibility. I guess you can't carry THAT sort of conscience around and live.

After that there was a family. A silent woman and a small child. A man—the husband—white haired, stooping. Johnnie Rennes, the Broadway star. Anything is possible . . .

They went away, and now I am alone except for my personal bugs. I estimate that I give them half a pint of my blood every day. The largest are half an inch wide. I used to kill them, but it led to such a compensatory birth curve that I left off. There's only me; I am their environment, and Malthus' laws still seem to apply. Good old Malthus! My sole contact with academic reality.

I am writing this as a time capsule. I will put it in a stone jar I found and leave it high among the rocks. For I think we're finished . . .

Cimex Martialis bestrides the whole world, and the springs of humanity have gone dry. No schools. No manufactures. No love.

The nomads haunted the roads and poked and peered in old garbage and the looted bug-hung buildings. Most were grey-haired; there were a few babies and young children. Rotted textiles and woollens had given place to skins of rabbit and rat and crude hide. Here and there were signs of attempts to rebuild the old economy—excavations for an underground farm of hydroponics—a cannery for mangels . . . But everything had been abandoned.

He said: "Tonight we sleep at Blue Springs. I found a cave, only two families in."

It was no longer a matter of escaping; by now all had their personal bugs. It was a matter of keeping moving with your burden until you died.

She said: "Johnnie, I've been thinking about Junior. He'll grow up a savage. Teach him to read and write."

He sat by the roadside and unhitched his food pack, wiping the sweat from his face. A dozen bugs fell from him and scurried back.

"I've been thinking, too. The young ones have to carry on—those born after the bugs. They've never had anything different." He pointed

at the small, half-naked boy. "He's never troubled about *them*—only about getting enough to eat. He's a parasite-host, but that doesn't worry him because he's known no other way."

"There's some sort of hope in that," she said, "for the human race."

"A queer sort. Demotion."

"Teach him to write."

"Who cares about writing?"

The bugs of the field came to him and climbed. His personal bugs gave battle. Ten times a day he was a battleground.

I KIN RITE

I KIN

I AM A RITER.

*ABCDEFGHIJKLMN
PTOZ.*

Almost two centuries passed.

The hermit came down from the hills. He was a young man dressed in skins. His flesh was horny; the bugs crawled and recrawled and he felt nothing.

Men were few: this was the only village in a hundred square miles.

He said: "The name's Rennes, and I can write. Also I can read."

The matted, calloused men and the scarecrow women and children stared, and one said: "What's them things good for?"

The hermit stood baffled for a moment, but said, at length: "For telling what dead folks thought."

"You're crazy," they said.

"Listen," answered the hermit. "My old man taught me them things, and his old man taught him, and his old man . . ." He flung two bare arms. "Over there . . . the city. Who d'ya think built it?"

"The Builders," they told him, like people humoring a child.

"Yeah, the Builders. Know what the Builders hadn't got that we've got?"

They grinned and shook their heads, leading him on.

"I found it in a writing up in the mountains, a writing by a Builder called Kenn Sigsbee. A writing I could read, because——" he slapped his chest "——I can read."

They went on smiling, but some began to go about their tasks. He called with raised fists: "Don't nobody want to know . . .?"

"You're crazy," repeated the few who stayed. But they

did not go away and he repeated: "I can read books."

They nodded. Mostly the books had mouldered away, but all knew the meaning of "book."

"The books make me think queer, but the queerest thing of all they never said. The writing in the mountains said this thing straight—this queer thing."

"And what is this queer thing?" asked the nudging listeners.

"That the Builders had no bugs."

They roared with laughter. "Go away. You're crazy. All your life you come this way to tell us the same—that the Builders had no bugs. *Men* they were, weren't they? Ever see a man without bugs?"

The spaceship came down from the sky and hovered a hundred feet above the plain. This was America. It had made similar appearances in Europe, Asia, Australia . . .

It was a huge ship, filling the sky. Gleaming vanes caught the light.

Suddenly a port opened and a transparent sphere, as big as a cathedral, went slowly to the ground and bobbed inquisitively towards the hori-

zon. Another followed, and then another.

The surfaces clouded and grew mottled, as test followed test—oxygen-heat-bacteria-radioactivity-humidity-pressure. They drank in video-images; listened microsonically; trembled with the sensitivity of loaded ganglia.

At last filming vacancies grew as force-fields relaxed and ports appeared. Pachydermatous creatures came out of the spheres—creatures roughly humanoid, the features over-large. Each stood about twenty feet high. The skin stretched taut over bald skull, or hanging like scrotum in heavy dewlaps, was grey and elephantine; it seemed doubtful if a blunt chopper would have made much impression on it. Yet these creatures, although awe-inspiring, gave little impression of evil, but rather of the sad and gentle strength of circus elephants.

Sadly and gently they gathered specimens—rocks, bugs, plants, bottled air, five terrified villagers of each sex. The spheres rolled back to the ship. The ship soared like a catapulted pellet and later dematerialised into hyperspace.

"How many people are there in the world, Daddy—three?"

"Billions, I guess."

"Daddy—one says ten hundred billions."

"Daddy—onemightknow."

"Where did we all come from, Daddy—three?"

"From a planet called Earth, near a sun called Sol. No one knows where that is. A long way off."

"Did we all come in spaceships?"

"Only one ship. And only ten people with the grey men."

"Did you ever see a grey man?"

"Not me, son. They all died a great many years ago."

"Why did they die?"

"They were slow. They had very long lives; but they got fewer and fewer, while more and more *people* were born, and in the end there weren't any more grey men left."

"Were the grey men the Builders?"

"Well, not exactly. The Builders are only a legend—not history. They were supposed to live on that planet called Earth, and they built wonderful cities with the help of tiny brown insects."

"We've got wonderful cities, too."

"That about the Builders is a story—some ancient people, I guess, who made bigger houses than other ancient people; and as for the insects, I expect those people were just plain lousy."

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NEZFEZ-1

by ALAN BURNS

The N.E.S.F.S. was born out of a letter by Don Allen to *Authentic*. A reply came from Ted Mason of Birtley, who volunteered to do some-secretarial work, and the Society was practically in business. When Fred Fairless, of Heburn-on-Tyne (who has almost all the science fiction mags in the world), came to be librarian our success was assured. We meet the second Sunday in each month in the Lambton Arms, Chester-le-Street, at 3.30 p.m. We have a permanent secretary, a treasurer and librarian combined, and Don Allen. Don is well worth an article to himself. He's the baby of the club, and is silent only when asked to speak, but he more than makes up for it by his heroic flow of written words. He produces *Satellite*, our fanzine, and has the shoulders of a Hercules from cranking a duplicator.

Force of circumstances, the need to eat and sleep, has caused him to cut *Satellite* to a quarterly, but when we get bigger we'll undoubtedly try

to get Don a motor-driven machine. Democratically, the chairman is elected by the members at each meeting, and the meetings are quite orderly while the business is being dealt with. This must take all of three minutes. After that our librarian, having entrenched himself behind a barricade of books, systematically repels raiding parties who have not paid their shilling meeting fee and their shilling library fee. When the books borrowed have been returned and new ones issued, the meeting breaks up into little groups where science fiction is discussed. Anyone talking about anything else is severely reprimanded by being asked to design a faster-than-light drive.

On the whole the Society has a very active membership, though, alas, none of the gentle sex have so far appeared to grace its meetings. Members include the laboratory director of a leading paint firm, a press photographer and an expert in electronics.

These three gentlemen give the meeting class, and a source of information.

The library aforementioned is second to none, and the shilling fee for the use of it at each meeting goes to buy new books, of which we have now quite a collection. As we don't have a meeting place that we can lock up, the usual detritus of models, paintings and so forth has not accumulated, although the suggestion of a display for the next local cinema so unlucky as to be showing a science-fiction film has shown that at least one of the members is a secret space-ship constructor.

In conclusion, anyone who cares to come along may do so, and the secretary is always delighted to hear from other societies and workers.

NEZFEZ—2

by Don Allen

Founded in October, 1953, through the letters column of this magazine, the society boasts forty members, holds monthly meetings, has a library, a fanzine, a club room and plenty of good spirit. It was in October of last year when the first spark of the club originated. My letter in *Projectiles* asked for N.E. fen

to write to me and said that we would try to form a club. One person wrote. He was Mr. G. E. Mason of Birtley. Yes, he was interested in a sf club and he would be only too willing to help out with the formation in any way he could. Little known to him at the time that he was going to scribe letter after letter to N.E. fen, to arrange meetings, and to be secretary of the proposed club!

From October, 1953, until March, 1954, Ted and I analysed the problem of how to form a club. Ted had contacted fifteen interested persons—though over sixty letters were sent out to people known to be readers of sf—and now he wanted them all to get together. But they all lived at such remote places that most of them would have two or three hours of travelling before reaching Newcastle, the proposed place for the club to meet. This, then, was the turning point. The club was originally planned to be a Tyneside group, but no fen could be contacted in that area. Instead, fans from scattered places throughout the N.E. were made known. In February, Ted said something had to be done; we had fifteen members all waiting for some-

thing to happen. So while still on the hunt for a suitable meeting place, a chain-letter was sent round the members.

Each member added a bit to it, stating his or her ideas of what the club should do. I recollect saying that I would help anybody who was keen on publishing a fanzine! Next thing I found myself pricing duplicators! From this point, February, 1954, I worked on the production of a fanzine, with not one little bit of knowledge how to produce one. Then, one day in March, I received word from Ted that he had found a meeting place. The Lambton Arms, Chester-le-Street, was the place, and still is, for that matter. So, one Friday night in the month of March, the fen of the N.E. finally got together. The customary formalities were held, a librarian was elected, Mr. Fred Fairless; a treasurer, again Fred was the boy . . . this time to look after our money! And gallant Ted the secretary. Myself, the fanzine, publicity and printer of anything that needed printing.

From then on we got to know each other, sorted out the true-fen, the mad ones, etc. . . . and so the club grew. More members were roped in, this time from a place where

before we couldn't find any, Tyneside. April saw the publication of *Science Fiction Satellite* No. 1 (now a mint copy), and the following month, No. 2.

The club meets on the second Sunday of every month in the smoking room of the Lambton Arms, Chester-le-Street, from 3.30 p.m. to 7.00 p.m. For the first half of the meeting the secretary, librarian, etc., give their reports. These, which are supposed to be formal, are always greeted with wise-cracks, and whoever holds the position of chairman usually goes crazy trying to restore order. At 5.00 p.m. everybody goes out to a local cafe for tea, and this is claimed to be the best part of the whole session—much to the sad plight of the cafe owner, of course. Afterwards the mob returns to the meeting room, full of fun and just itching for an opening to slip in a wise-crack. Any person can give a lecture at any time, and points for discussion are very much welcomed—like-wise so are subscribers to *Satellite*. New members are always welcome, and they can write to the secretary for details or come along to a meeting. Remember—the second Sunday of every month.

On the 12th September Ted announced that he was resigning from his position of secretary and that the position was open to anyone who cared to fill it.

The new secretary is Mr. Alan Burns, and all correspondence concerning the club, except anything concerning *Satellite*, should be sent to him at the following address: 6, Goldspink Lane, Newcastle 2. At the meetings I guarantee that you will enjoy yourself. Mix in with the regulars, present your arguments and opinions, discuss the latest

publications, help plan the future events for the club, have a pint or a coffee, whichever you prefer. But the main thing is to enjoy yourself, and you will, no matter who is there . . . what you do or how you do it, you *will* have a good time. That is what the NESFS is for, so that all the N.E. fen can get together now and then to natter, argue, raise steam, laugh and to have fun.

(Note: NEZFEZ is the local abbreviation for the North-East Science Fiction Society.)

**DO YOU KNOW . . . YOUR METEORITES
AND METEORS?**

1. In which months are meteoric showers most common?
2. What is a meteor?
3. What is a meteorite?
4. What are meteors made of?
5. How many elements have been found in meteorites?

Answers on page 118

Playing with fire is safer
by far than—

PLAYING WITH TIME

by W. H. BOORE

DAVID awoke early and glanced towards the bed of Lloyd, his younger brother. Although it was three months now since Lloyd had been hanged at Manchester Gaol for the murder of the girl who had come between them, David always looked towards the bed beneath the window as if half-expecting his return. Then David rose, dressed quickly and crept downstairs; he cut himself a chunk of cheese and a thick slab of bread, and with cheese in one hand and bread in the other, walked through the grey stone village, munching.

It was to Plynlimon he was going—Plynlimon, where he and Lloyd had played as boys. As he passed, curtains twitched behind him.

Mrs. Evans, lossin-shop, spoke over her shoulder. "David's going up the mountain again—he's getting funny ways on him since Lloyd was—er—was—er—died."

Mrs. Jones, the milk, mut-

tered to herself as she turned back into her room. "David, bach, something will come to you, mark my words, and you moping alone on that old pagan hill."

And the Minister of the little chapel gave a worried sigh as he watched, and wondered if it was yet time for him to try to reclaim the lost.

But David knew where he was going and, in a confused way, why he was going there. Twice on Plynlimon things had happened to him that he could not understand. Since Lloyd had dropped from the gallows trap, the world that could be understood held neither hope nor meaning for David, and he pursued the inexplicable with no more purpose than that it took him away from the known.

He remembered the first occasion—a week ago now—when the old shepherd on the mountain had asked him the time.

"Half past ten," David had

said. "Half past ten, and if my watch says half past ten, you can bet Caernarfon Castle to . . ."

And then it had happened. The day had suddenly faltered; and David had felt himself flickering. The flickering had been agony, alternating through every pore and sinew of his body. He had been all pain; not a convulsive or a cramping pain; more than that—a pain that stretched him; a pain that made him reach out like a stuck insect. As suddenly as it had started it ended, and David, without pain, had been stilled. For a moment he had stood in the brittleness of agony arrested. Then he had ventured to open his eyes, and had seen the Being; the Being who had sat where Plynlimon had been; the Being whose belly had sagged like a mainsail in light airs; but whose head, as big as his body, had been hard and hairless and bony. Because David was a Welshman, he had taken refuge from his terror in words.

"Good morning," he had said. "Good morning, and where are you from, may I ask?"

"Not where am I from," the Being answered. "But

when am I from." His voice had been strangely at variance with his appearance; a thin, reedy sound, incredibly clear; its precise syllables had seemed to issue from between the Being's thick lips like bubbles rising from treacle: "And when are *you* from?"

David, in his terror and amazement, had turned his thoughts again to Lloyd, whose company had so often sustained him, and thinking of Lloyd, he had replied: "I am from the time of torment."

"A good answer," the Being had answered, but he had at that moment seemed somehow pre-occupied. David had felt himself pulsating. "I am afraid," said the Being, "I am afraid I have to make some adjustments; I must switch you off."

And David had found himself again facing the shepherd, and he had heard his own voice continuing: ". . . to a china orange that half-past ten it is."

"Thanks," the shepherd had muttered, and had hurried away with, David had felt, a quizzical look in his eyes.

And, strangely enough, half past ten it still had been.

David had told none of his adventure, but every morning

since then he had returned to the scene of his meeting with the shepherd. Once he had felt a twinge, and the sun had seemed to tremble for a moment.

Meanwhile, the Minister and Mrs. Jones, and Mrs. Evans watched his comings and goings, and told others of the new madness that was spilling behind his eyes. Every morning when David went out, the curtains twitched; and every noon when he returned, the Minister would be coming towards him, ready to be spoken to; and Mrs. Jones and Mrs. Evans would be in the street, surrounded by the comfort of ordinary things, and watching the strangeness in him.

It was ten days before the event recurred. This time it was easier, and David stood again before the Being, scarcely aware of the quick agony that had brought him there. He still could not repress wholly the terror that possessed him, but a wild hope burned in him and transcended all his fears. He held firmly to the pursuit of understanding. First of all he stretched out a hand to touch the Being and assure himself that it was real. But somehow,

touch could not reach. David's hand seemed to spread like an image out of focus, to dissipate itself, to flow around the stranger like a film of oil. Yet the Being responded by putting out his hand, and David felt the substance of contact.

"There is more between me and you than there is between you and me," said David.

The Being chuckled. His laugh was deeper, more human than his voice. David felt a certain comfort, and tried to sustain it by the sound of his own voice: "There's dark it is where you are."

"On the contrary," the Being answered, "it is a very fine day, indeed. Look." And he pointed to a dull red disc lowering in the sky behind him. "It is a fine day—but, of course, you had a younger sun than mine."

"Aye," David answered with a ghastly parody of wit, "and a younger brother, too. But what is all this? I feel dark and wide, too. And your light, it is a crawling light."

The Being stretched his hand upwards and forwards until it disappeared over the sky, and appeared to turn something. David grew aware that he was becoming smaller,

tighter and filled with lustre. Light shone from within him, and from within the grass and the trees and the little streamlet—until he was a tiny, crystal creature in a shadowless world. But the Being still sat in his dimness. David felt the need for familiar things.

"Are you a Presbyterian?" he asked.

"What strange words you use," said the Being.

"Well, if you won't tell me what you are, can you tell me what I am become?"

"You are the record of what you were," came the answer. "First we had television of the past—like pictures on a screen. Then we put in a new dimensional valve, which had a stereoscopic effect."

"Three-D," said David.

"You called it that, too, did you?" said the Being. "Well, well, man hasn't changed much in a thousand million years."

He paused a moment. "Then we put another valve into the circuit and we found the image was cast with life—the fourth dimension."

David was struggling within himself towards a thin, remote, unbelievable suggestion of hope. "Can you turn me back?" he asked.

"Certainly," the Being answered, and reached up again over and out of sight beyond the sky. David could see the soft muscles of his arm, pumping. There was a remote whirring sound, and David felt himself suddenly bucketted about like a marionette whose movements are not his own. Then the whirring ceased, and David was standing a little lower down, where the mountain stream foamed by a shoulder of rock. The shepherd whom David had met ten days ago was disappearing below, as he had disappeared then, and David knew it was now ten days ago. The hope within him burned as steadily as his determination to pursue it.

"If," said David to the Being, who was, despite the change of position, just as near as before—or was it after, "If I can be reversed ten days, couldn't I go back, say five months?"

The Being lifted his hand again towards the hidden controls, but David intervened, quickly: "Not yet, not yet. I will go to then some other time. I want to stay now in now for now anyway, if you see what I mean."

The Being withdrew his hand. Slyly David bent down

and began to pick the luminous stones from the bed of the luminous stream, gradually building a little dam, which he caulked with shining clods from the unearthly glitter of the fields, until the flow of water switched to the other side of the shoulder of rock. The false glitter of everything made it difficult for David to realise how deadly serious was his experiment. He watched the water in its new course, pouring down and drenching the short mountain grass with light. "Too much Technicolor for me," he muttered to himself.

The voice of the Being interrupted his thoughts. "You'd better go forward again to when you came from." David was again dancing in and out of the faint whirring noise. It stopped suddenly again, and he was face to face with the Being, the Denizon, the Operator.

"I'd better switch you off for you to see what you have done," he said, and David was immediately back in the normality of his surroundings, except—and he could hardly believe his eyes—except that the valley below him was flooded by his own diverted stream—the little stream that

David had diverted ten days ago in the last few minutes.

He stood for a moment, murmuring to himself: "Ten days ago in the last few minutes." And slowly exultation filled him. No more was there room for fear or sorrow.

The Minister was delighted to see David's confident bearing when he met him that mid-day. Mrs. Evans told Mrs. Jones that he looked a new man and there was mischief brewing somewhere, no doubt. And Mrs. Jones said that the Holy Spirit must have touched him, glory be!

To David, now, Plynlimon was a trysting place. Next morning he reached there early. He waited half a mile away for three quarters of an hour, so that he could time his arrival to the moment he had reached the scene previously. It was vitally important that nothing should disorganise the business. And, indeed, when he reached the spot, there was a sudden click, a second of searing agony, and again he stood before the Being. David waxed and waned for a few moments while the Being fiddled with the controls above David's sky. At last he seemed satisfied.

"Did your experiment go well?" he asked.

David knelt slowly on the bright grass, with no shadow about him, and with his face turned towards the Being in his darkness. He placed his hands together before his face, but his eyes he kept open. "I am praying to you," he said. "I am praying that you will put me back now five months ago before all the mischief in my life had broken."

The Being seemed to sag. His voice was shrill with sadness. "No," he said. "No. You would try to change the completed past. And that you must not do."

"Great Creature," David mumbled, "let me go back to do one thing; no, no, not to do, but to undo—only a little thing."

"It was only a little thing you did to the mountain stream," said the Being sternly.

"But this is to do with my brother, Lloyd," said David. "Just between the two of us."

"When you went back ten days to alter the stream, you made ten days' accumulation of consequences—ten days of flood water—drowned pastures and ruined a farm. If

I turn you back five months, on what, yes, what, indeed, may you not do to history?"

"I'll keep it between Lloyd and me," David implored. "Just us two—that can't make a new world or break an old one. You see, Lloyd and me are only little people."

"You see what happened to the stream," said the Being. "Mark this well. Time, like any other limb of nature, overdoes the repair of its fractures."

"Please," said David. "Please, you are kind—I beg of you."

The Being looked thoughtful. "In my dying world, there is room for pity, but none for kindness. I want to know what it is like to be kind. Very well, I will turn you back five months, as you ask; but I warn you, Time will not be gracious to him who tampers with the store of past events."

As David rose to his feet he became again involved in, and whisked about by, the whirring noise he now knew so well. When it stopped, he found himself standing in the shadow of a doorway. Before him stood his brother, Lloyd, holding in his arm the girl—the hussy who would have

caused all the tragedy. It was funny, David thought to himself, that he could remember what had not happened, that he could recollect from the future he had just left.

Slowly David withdrew from inside his shirt the long carving knife he had placed there that morning five months hence. "Funny thing, that," he thought as he moved forward swiftly, raising the knife as he went.

As he brought the blade down between the girl's shoulders, David felt no anguish. They were all only images, and the blood that spurted from her shone as it flowed. As David looked at that red gleam of the adjusted past, he heard again the distant whir-

ring of the spool that had brought him there.

The Minister turned and looked as if he had seen a ghost. The poor man murmured to himself as his gaze followed the sad figure down the village street.

"He looks," said the Vicar, to himself, "he looks exactly like his brother, Lloyd."

Lower down the street, Mrs. Jones and Mrs. Evans looked at the youth, watched him open the door of the cottage, and close it behind him. For once, they were speechless.

Inside the cottage, the lad sat on the bed under the window, and looked across at the other bed.

"Oh! David," he murmured brokenly. "Oh! *David*."

BRITISH SF CONVENTION

1955

This is now being organised by prominent fans and will take place at the George Hotel, Kettering, Northants, over the Easter week-end (8th to 10th April), 1955. Registration fee of 2/6 should be sent to Joe Ayres, 7 Doris Road, Kettering, who will supply further information. We advise you to go. It will be great fun and very instructive.

How to Make a Bug-Eyed Monster!

by FRANK WILSON, B.Sc.

THE leering, salivating bug-eyed monster has been a constant ingredient of science fiction since its inception—much to the shame of the authors, the detriment of the genre, and the anguish of the serious reader. The only thing in common about these diverse monstrosities is that none of them could possibly exist. If *that* is science fiction, then somebody has been barking up the wrong tree—and that somebody is your Editor. He believes that science fiction by definition, must deal with possibilities and, preferably, probabilities. But, realising that monsters of some kind are likely to be met with on other worlds, he has asked me to write an article on the biological limitations of monsters. In other words, I am to supply creational blue-prints for BEMS!

Let us first consider what the limitations are. Take size to start with. I would say that not a single living biologist disagrees with the idea that animals are as big as they are

because they *couldn't* be any bigger—or smaller. Since we're a homocentric lot, we'll consider the case of the average man. He is said to be about six feet tall. Let us accept that figure and then try to turn our average man into a giant—sixty feet tall.

We've made him ten times as high, ten times as broad and ten times as thick from front to back. And that's about all we have increased ten times. His weight will be one thousand times as great as it was—in the region of eighty tons! Big, husky, tough guy? Friends, he would be a weakling. He couldn't even stand up without dislocating his shoulders, breaking his neck, back and thighs. Dear God, what have we done to our average man!

Well, we've upped his linear dimensions by a factor of ten and we've increased his weight by a factor of one thousand. But we've done something else. We have enlarged the cross-sectional area of his bones by a factor of one

hundred. A little bit of easy arithmetic shows that any given area of bone, say one square inch, now has to support ten times as much as it supported in the average man. And it cannot do it. Laboratory tests have shown that human bone snaps under such loads—even the massive thigh bone. Nor can the shoulder joints retain the heavy arm that hangs down from our human monster. The humerus would be wrenched from its socket.

If we *must* have a man sixty feet tall, then we must make sure that his bones are a good deal more than ten times up in cross-section, so that each square inch has the same load to bear. Our monster man must have limbs and neck like a rhino's. And he'd be just as clumsy and ponderous as that lumbering beast.

All this, of course, applies only when the giant lives on a planet with Earth-type gravity. On a world with considerably less gravity, he may well be sixty feet tall without breaking his bones at every step. But he couldn't exist—for other reasons. These reasons are best studied in animals such as insects and are concerned with surface areas.

Insects "breathe" through a bodywide system of closed tubes, called tracheæ. That is, they obtain their life-giving oxygen by its diffusion from the atmosphere, down the tracheæ and across cell-membranes at the ends of the tubes. Plenty of experiments have been done to show that oxygen diffuses very slowly along the narrow tubes. And, since the average rate at which insects use up oxygen has been determined, it is easy to demonstrate that any insect body structure at the end of a tube more than about six millimetres long will be practically starved of oxygen. Now, you try to find an insect that is more than a half inch wide! There isn't one. Insects just cannot grow to that size because they wouldn't be able to "breathe." So all the stories you come across in which there are giant moths, massive beetles and gigantic cockroaches—all these stories are fantasies, not science fiction.

Insects are highly specialised and very successful animals. It is only this sort of surface area limitation that has stopped them becoming much more dominant than they are. In order to be larger, animals had to develop other types of respiratory mechanisms. They

could not simply enlarge their existing tracheal system, for the inexorable laws of mathematics apply once more. An animal that becomes ten times as big in linear dimensions will have increased its surface areas by a factor of one hundred. But its weight, that is, the total amount of bodily tissues—its weight has increased by a factor of one thousand. Therefore, it needs a thousand times as much oxygen, a thousand times as much food—and it must be able to get rid of a thousand times as much waste or it will poison itself.

Yet we have seen that the various surfaces—intestine, lung, gill, kidney—have gone up by a factor of only one hundred and will, therefore, absorb only one hundred times as much food and oxygen, and can eliminate only one hundred times as much waste. The animal, in fact, that is enlarged ten times can take in only one tenth of its nutritional needs.

That is why such structures as gills, lungs and coiled intestines have been evolved. These are, in effect, simply surfaces which have been folded up many times so that they can occupy a smaller space.

In the confines of the human chest there are one hundred square yards of lung surface. A man who is ten times up in linear dimensions from average will need one hundred thousand square yards of lung; but you've given him only ten thousand. So, he will suffocate!

Thus, even if our human giant could withstand the gravity of a very small—or light—planet, he would not be able to breathe unless there was considerably more oxygen in the atmosphere than there is in Earth's. But on a little or light planet, the forces holding gas molecules near the surface is smaller than similar forces on Earth, and so the gas molecules will drift higher and eventually escape from the "top" of the planet's atmosphere. Thus, a planet that is smaller or lighter than Earth must have less oxygen in its atmosphere. So—as we've said before—our human giant could still not exist.

Gravity, naturally, can be considered from another point of view. This is concerned with the dangers of falling. Everybody has seen flies fall from the ceiling and everybody has seen cats jump down through amazing distances with no harm. In the words of

Professor J. B. Haldane—the world's foremost biometrist—"You can drop a mouse down a thousand-yard mine shaft; and, on arriving at the bottom, it gets a slight shock and walks away, provided that the ground is fairly soft. A rat is killed, a man is broken, a horse splashes." (This quotation comes from Haldane's book *Possible Worlds*—well worth reading.)

This is because the resistance that air makes against a falling body depends upon the body's surface area. And, therefore, the rate at which a body will fall and the force with which it hits the bottom, will depend on the proportion of body surface area to body weight. Now, the smaller an animal gets, the greater is its surface area relative to its weight. In figures, if you increase the linear dimensions by a factor of ten, the weight goes down by a factor of one thousand, but the surface area is decreased by a factor of only one hundred. That is, the animal has relatively ten times as much surface as it had before. Or, if you *increase* the size by a factor of ten, the animal has relatively ten times *less* surface area than before. Therefore, when an animal is made ten times smaller it

comes up against an air resistance relatively ten times as great. And when it is made ten times larger, it meets a resistance relatively ten times less. Thus, our giant man, apart from the trouble with his bones and his lungs, is liable to turn himself into a jelly if he falls!

Since many pseudo-science fiction stories are about *flying* monsters, let us consider flight from the more scientific angle and see whether there is any factual precedent for the supposition of such creatures.

Aeronauticists have been agreed since the earliest days of the science of flight that the slowest speed required to keep a 'plane of given design in the air depends upon the square root of the 'plane's length. Given, say, a bird of the eagle design, if you increase its linear dimensions by a factor of twenty-five, then it must fly five times as fast merely to keep up. But the *power* required for increased speeds increases about twice as fast as the weight increases. So a bird that is twenty-five times larger than average, weighing one hundred and twenty-five times as much, must generate *two hundred and fifty* times as much power, just to stay in the air. Now chemi-

cal reactions take a certain time and release a certain amount of energy. There is no way of increasing these things. And so it is impossible for muscles that are only one hundred and twenty-five times as big as they were to develop two hundred and fifty times as much power as they did before. That is why you do not find birds larger than a certain size. That is why the kind of flying monsters you read about in the inferior publications are not only right out of this world, but right out of this universe! They are constructed according to quite unknown biological laws.

Having gone so far with me, you are probably wondering when I am going to get down to giving you the blue-print. Well, I've thought about this a lot, but I'm afraid there just is no blue-print for BEMS.

You see, every time you try to design an animal that will actually *work*, you can get as far as maybe one or two systems and then you realise that the creature you have designed would fail because of some other system's not being able to function.

Naturally, I'm not a world authority on biology, but I do know quite a bit about it. And I would say that, given the same kind of physical laws and the same kind of carbon-based life, the animals we find will be fundamentally just like the ones we know—no matter from what distant star they may come. Queer ones there will be for sure, but not nearly so queer as the BEMS!

(Note by H.J.C.: Though I gave Frank Wilson free reign for his ideas, I hoped and felt sure that he would come to this conclusion. I do, too.)

By now you'll probably have read *TRIPLANETARY* by E. E. Smith and be anxiously awaiting publication of the next five novels in this epic of the Galactic Patrol. But you don't need to wait! Copies of these and many other famous novels are available to members of OUR SCIENCE FANTASY POSTAL LIBRARY.

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PARTING

by PETER E. RIGBY

"**T**INLID! Oh, Tinlid; where are you?"

The child's voice disturbed the silence of the sunny, summer afternoon. A little girl emerged from the back door of a large house. She stamped across the yard, her young lips pouting prettily, and stopped at the top of some steps which led down to the basement. She called again, insistently: "Tinlid, come here at once!"

Still no answer.

With a look of foreboding that many of her elders would have envied she scurried down the steps and into the basement where her robot companion was housed. She tried the door.

Locked.

She began to cry and hammer on the metal door with her tiny fists. She made no impression on the door; she merely hurt her knuckles and made herself cry all the more.

With a sob she turned and scuffled back to the daylight again. She ran, as fast as her six-year-old legs could take her, to the gardener's cottage. She knew that old Adam should have the key to Tinlid's room.

"Why have you locked Tinlid in his room?" she demanded in her shrill little voice. "Give me the key at once."

"I'm sorry, Miss Pamela," said old Adam. "Your daddy said that there robot is to be destroyed and taken away fer scrap. He says a robot that old is dangerous; it might go running wild and do some damage. I never did like the danged things; doin' honest folk out of a livin'. I'm glad your daddy's got sense enough not to use one of them things in his garden. When I think of one of them tin things clankin' about in *my* garden amongst things what folks gotta eat I

go hot and cold inside me." He finished breathlessly. It was an unusually long speech for him, but he hated robots, as well he might, for robot gardeners had ousted him from a good job many a time.

His long speech amazed Pamela. When he had finished she stood staring at him, her clear blue eyes wide open, and her cherubic mouth forming an "O" of surprise.

Adam's anger left him. His final remark was, gruffly: "You'll be gettin' another one to play with afore the month's out. Anyway, your daddy's got the key, so you'd better go and see *him* about it."

Pamela had remained strangely quiescent while Adam had been speaking, but his last remarks had stirred her into action as she thought again what had happened to her beloved Tinlid.

She ran back to the house and into the hall. "Where's daddy?" she demanded of the amazed maid.

"Why, he's in his study with a visitor, Miss Pamela. He says not to disturb him and he . . ." But Pamela did not stay to hear the rest

of what the maid had to say. She galloped off up the stairs.

She ran along the corridor to her father's study and went right in without knocking. Ignoring her father's visitor she began: "Daddy, why have you locked Tinlid in his room? I want to play with him, and he'll be lonely without me. You've no right to lock him in there. Give me the key at once!"

"Pamela!" exclaimed Samuel Warburton, reproachfully. "*You* have no right to come barging in here when I am entertaining a visitor, and you shouldn't speak to me like that." He paused. "However, now that you are here, and as you have found out about your robot companion, you may as well stay and hear what we were discussing."

He turned away from his crestfallen daughter and spoke to his visitor, Michael Clayton.

"I'm sorry for the interruption, Mr. Clayton, though now you can, perhaps, see the affection my daughter has for her robot companion. Her name is Pamela."

He turned to his daughter again: "Now, if you are prepared to speak in a civilized manner we can begin.

This is Mr. Clayton from General Cybernetics Incorporated; he had some of his engineers examine your robot last night while you were asleep. Their verdict is that the robot needs to be dismantled. You see, its brain circuits cannot last for ever, and if something went wrong then several unpleasant things could happen. It could lose all power of muscle co-ordination, its memory could fail, or," he paused grimly, "it could go completely berserk."

Clayton continued for him: "So you see, Pamela, we are going to take robot 117——"

He was interrupted by Warburton: "Ahem. Her own name for him is 'Tinlid,' by the way."

"Thank you, Mr. Warburton." He turned to Pamela again. "Well, we are going to withdraw robot number . . . er . . . Tinlid, from service and use some of his spare parts to build new robots; the rest of him will go as scrap. Your daddy is going to buy you a new one. Of course, it will be much better than that old non-vocal thing you have got now."

He leaned back in his chair and beamed at Pamela. If

he expected an answering smile from the child he was sadly mistaken.

Much of what the two men had said had gone way above Pamela's head. She realised two things only: one, they were going to take away her beloved Tinlid; and two, she was going to get an unfamiliar new one in his place.

"But I don't want a new robot," she began. "Tinlid knows me, he plays with me, we have fun together. I know he'd be unhappy without me."

"But look," said her father, impatiently. "His brain circuits are worn out and they may cause him to go wrong, and——"

He was interrupted by Clayton: "I'm afraid all this is too deep for her. After all, she's only six, and it takes years of hard work and hard study even to begin to understand what goes on inside a robot's brain-box."

"True, true," sighed Warburton. "This is going to make it difficult. Look, do you think it will be safe to allow her to have her present robot in operation until the new one arrives? Perhaps when she sees the new one and compares it with the one she has now, she will see just

how rusty and dirty her present robot really is."

Clayton pondered. "Well, all right. It should be safe enough for another ten days. By then the new one might be ready. I know that the engineers always allow a wide margin of error when they condemn a robot; and, as you say, she will probably change her mind when she sees this new one, with its—" he glanced at Pamela "—shiny metal body and big green eyes. It looks more life-like too, and this one will be able to talk to her. You will like that, won't you, Pamela?" he finished.

"No," retorted Pamela.

"Pamela!" shouted Warburton. "Where are your manners? You do not deserve to have a new robot bought for you if you are so ungrateful."

Pamela was crying now. "Don't wanna new robot," she wailed. "I want Tinlid!"

"My word!" exclaimed her father. He crossed the room and opened the door.

"Ethel!" he shouted. "Come here."

On hearing Warburton's tone of voice, Ethel hurried up the stairs apprehensively.

"Take Miss Pamela with you," he said, "and put her to bed at once."

Pamela was so upset and had got herself so worked up at the thought of losing her beloved Tinlid that she was too tired to remonstrate with her father. She went off docilely with Ethel, and when, later in the evening, her father looked into her bedroom, she was fast asleep.

When Pamela awoke the following morning, she tumbled out of bed right away, threw on some clothes and hurtled like a small tornado down to the basement. She nearly fell down the last three steps for there he was—Tinlid, her very own Tinlid. She flew into his strong arms and babbled hysterically to him. She told him how lonely she had been without him, and how much she had missed him, and how she loved him. Then she took a step back and gazed at him. The lettering on his chest, *Robot Nursemaid and Child Companion No. 117*, was almost undecipherable now. He had a big scratch along his body where Pamela had bumped into him on a swing, there was a jagged line down one leg where she had grazed

him while riding her tricycle one day. Pamela smiled at all these familiar marks and looked at his face. That flat nose, those deep-set eyes, that smooth dome that was the top of his head, once so shiny; it was now tarnished by twenty or more years of service. Pamela gazed and gazed at him. It seemed she had been parted from him for many weeks, not just for one day. There he was, her own Tinlid, her friend, her playmate, and her confidant.

Although a non-vocal model, number 117 understood human speech. Certain commands brought from him the correct reactions. Also, certain actions by his child master or mistress would invoke certain reactions in him. If the child should fall he would help in picking him or her up; if the child should be tired he would carry the child home. All these reactions, and a host of others, were indoctrinated into his brain-box by his makers. The circumstances for which he had no prepared reaction were rare indeed.

Pamela idolised him. To her he was human and understanding. He was never bored with her chatter, nor too tired

to play with her as the grown-ups often were. If truth be known, Pamela loved him more than her parents, who had much love but little time for her. It was for that reason that the robot, a very expensive piece of machinery, had been bought for her at all. Few families could afford such a thing.

"Pamela, come to breakfast." It was her mother calling.

"Oh bother," she said. Her face clouded for a moment. "And I've such a lot to tell you, but it will have to do after breakfast." With which she retired hastily to the dining room.

After breakfast, Pamela and Tinlid went to a favourite haunt of theirs behind the summer house.

She began haltingly: "Tinlid, they want to take you away." She paused, fighting to keep back the tears. "They think you're too old, and they want to take you away and *kill* you," she ended, with a wail.

"And they want to give me a strange new robot to play with. But I don't want a new friend, Tinlid, I want you."

Pamela began to sob. Inside the robot's brain-box a relay

clicked. Tears, therefore the child needed comforting or was in pain. The child was not in pain. Reaction: Try to comfort the child. Sit child on lap, rest one arm gently on the child's shoulders. As quick as thought, the robot did these things with a tenderness which a mother would have envied.

Pamela snuggled up to him.

"You're so big and strong," she confided to him. "Don't let them take you away," she commanded. "I want you for always and always."

The robot remained impassive, and soon Pamela was asleep in his arms.

It was the evening of the tenth day. Samuel Warburton was in his study, speaking to his daughter: "I'm sorry, Pamela, that this parting has to take place. You will understand more what this is for when you are older. Do you remember when your pet rabbit died? Well, this is much the same. Robots have to die, too, in the same way as people and animals have

to die. It's the natural order of things . . ." His voice tailed away.

He cleared his throat noisily and re-commenced: "Tomorrow morning, Pamela, after breakfast, you must go down to the basement and wish Tinlid a last 'Goodbye.' Then I will come down for him, and . . ." he paused and sighed, ". . . I'm afraid you will never see him again."

Pamela's sobs were pitiful to hear. It was useless to try and comfort her. No, she didn't want any other robot; she didn't care, and she hated everybody and, and . . .

For once her father did not scold her. He called quietly to his wife, and together they put Pamela to bed. None of the household got much sleep that night.

It was morning.

It was the fatal morning. It was the day when Tinlid, poor Tinlid, must go, never to return . . .

Pamela crept down the stairs to the basement. The house upstairs was in a

pandemonium. She had used all the weapons of her age, but all to no avail. She had wept, she had screamed, she had implored, she had demanded; but no, Tinlid had to go.

Now she was seeing him for the last time. She was in his arms, and she was crying and babbling to him. But in the robot's brain-box a relay clicked. All the child's needs must be supplied. The robot was to be taken away, but the child wanted to keep the robot.

Reaction: the robot must not let itself be taken away.

Pamela's father called from the top of the steps: "I'm coming to take Tinlid away now."

"What are you hiding behind the door for, Tinlid?" whispered Pamela to the robot, too quietly for her father to hear.

She soon got her answer.

Warburton hadn't a chance when the massive metal arm smashed down on the base of his skull.

DO YOU KNOW . . . YOUR METEORS AND METEORITES?

Answers to questions on page 99

1. August and November.
2. Bodies which enter Earth's atmosphere from outer space and which are burnt before reaching the surface.
3. Bodies weighing from a few pounds to several tons which reach the Earth's surface from outer space.
4. Iron, sometimes nearly pure, or with nickel; or stone with traces of iron.
5. About 30 of those known on Earth.

What spaceships Will really look like

SPACE SHIP-SHAPE

by W. W. BYFORD, B.Sc.

Bullets seem to be the accepted pattern for vessels to leave the Earth and saucers the approved design for the shape of things to come from space to us.

In the first case there is, to many folk, no more than the mental association of a sharp-nosed cylinder with speedy movement to account for the idea that a spaceship will be like a high velocity shell in shape. In the second case a multiplicity of reported saucers, and the established aeronautic possibility of flight by such a form, are possibly better reasons for believing the saucer to be a successful spaceship shape.

True space travel, however, will not involve aeronautics. Rather we shall have to devise a new word for a new science, something like vacuonautics. (Astronautics is not at all suitable.)

The shape of any efficient instrument in the service of man is decided by the purpose which it has to serve. The shape of a vessel which will traverse the space between the planets will be decided largely by the nature of space.

STREAMLINING—WHY?

Since there is no air in space there will be no point in streamlining. Streamlining is designed to make the passage of an object through air disturb the air as little as possible, and where there is no air there is no purpose even to be served by a sharp nose.

The long cylinder in space has no significant advantage as a mobile shape. In air it is a way of getting as large a bulk as possible to move so that it cuts as small a lane as possible through the air. In space there will be no lane to cut. Remember the classic experiment in which a golden guinea and a feather were dropped simultaneously in a tall glass cylinder from which the air had been evacuated? They reached the bottom together. Shape will not be related to speed of movement or ease of movement in space. Other factors will have to be considered.

SKIN VERSUS BULK

A cylinder has the disadvantage that it encloses only a small amount of room in a large surface. A high explosive

shell is cylindrical in shape because it has to travel through air rapidly, but it cannot contain much explosive in proportion to the amount of metal used to make it. The desirable large explosive content has to be sacrificed to the more urgent need to ensure its ability accurately to reach a given mark at a given distance. A mine laid at sea can be designed to enclose the maximum amount of explosive in the smallest area of metal, regardless of ballistics. In such a case the best shape for the job becomes a sphere. This can be proved by a fairly simple application of that branch of mathematics known as the calculus. You can demonstrate the same idea with a piece of modelling clay and some metal foil. Make the clay into a long rocket-like cylinder and then find out how much of the metal foil you need to cover it. Then roll the same piece of clay into a ball, cover it with foil and see how much you need.

THE FAT MAN AND THE THIN

You may be thinking: "The spaceship is going to cost such a whale of a sum for its innards—why fidget about the

cost of the shell?" Well, yes, of course, if that were all, but do not forget that extra casing is extra weight, and less useful load for more fuel.

Besides, consider the long, thin, cylindrical man and the short, fat spherical fellow.

Watch them on a cold windy day go down to the water to bathe—and come out wet. It is the cylindrical job that gets really blue and shivers like an aspen tree and gets dressed at the double. He has too much cooling surface to lose calories of bodily warmth and not enough inner bulk as a reserve of heat. The spherical chap is much better off with a lower ratio of cooling surface to inner warm tissue content.

Watch them again, the same pair on the way home from work in a crowded bus or train, on a scorching hot summer day. The cylinder has it over the sphere this time. His skin can perspire moderately over a surface which is large in proportion to his bulk, and the evaporation of the sweat takes away the unwanted calories to leave his blood comfortably cooled. The tubby fellow is sweating like a fountain from every available pore but his smaller ratio of skin to bulk does not give him

a big enough area of pores to sweat through.

Mind you, if our vessel has to be big and narrow, then a circular cross section gives a higher cubic capacity to surface ratio than does any other cross sectional shape. A round hot pipe loses as little heat as possible in carrying hot water or steam from place to place, whereas, if it is desirable to lose heat, the cross sectional shape is modified to increase the surface exposed. This is usually done by flattening the pipe, as in a radiator.

HEAT—TO LOSE OR CONSERVE?

Now, on our travels, which will be our problem? If we are going to start out and attain high velocity while still in the shallow shell of Earth's atmosphere, we shall need a streamlined narrow rocket-shaped vessel to minimise air resistance. Nevertheless, we shall be causing such friction with the air on the hull surface that it will be neither a case of losing heat nor trying to keep it in, but an urgent need to keep it out that will be our immediate headache. Several of the V-2 rockets descending on Britain from well above the

denser air exploded on impact with it, probably because of the heat produced by friction of air on its surface. Every shooting star is a demonstration of what happens in the way of heat generation when a nice cold little meteor, travelling rapidly, hits the air, creates friction and becomes incandescent and disintegrates. Moreover, it is much more economical of fuel to move slowly through any fluid, liquid or gas, than it is to do so at speed. Think how many tons a horse can pull in a barge at walking pace and how many horse power are needed by a much lighter speed boat. Why waste so much of the take-off fuel load for the sake of doing the first few miles quickly on a journey to a planet? Do we use a thousand tugs to get the Queen Elizabeth down the Solent for the sake of saving ten minutes on a trip to New York? Take it slowly, and almost any shape will be able to ascend at reasonable cost without any temperature complications.

But what happens once clear of the atmosphere? No air or appreciable quantity of any gas to oppose movement will be there. Therefore, no streamlining. Any shape will

do. Temperature? Heat is movement of atoms—no atoms, no heat. We cannot use the expression temperature of space because where there is no substance nothing will be either hot or cold. The only way in which heat will be able to reach the spaceship will be as radiations which may fall upon it and which, as forms of energy, may be absorbed by the atoms of the hull to warm them up a little. How much do radiations warm up the summit of Everest—or a stratoplane?

No, not a lot of heat will reach the vessel, but what about the heat generated therein?

We have no known type of motor which does not need cooling. All our car engines are eventually air cooled. The so-called water-cooled engine is cooled by water which, having become hot, is taken round a radiator to be cooled by air. Stationary engines are sometimes cooled by taking cold water from a river and returning it to the river heated, and a boat can be cooled by the water through which it moves.

This no air in space theme is as repetitive as radishes. Whether we like it or not it

just keeps coming up. It is going to make quite a lot of things very different from the way they are here on Earth, and this business of what to do with unwanted heat is one of them. Quite a prickly one, too.

HEAT TO SPARE—AND NO TAKERS

The heat of the engine cannot be allowed to stay aboard. Even if only the body heat of the occupants were allowed to accumulate indefinitely, the temperature of the ship would become unbearable. There will have to be a way of disposing of heat. It cannot be given away to any other material in the neighbourhood. In some way or other the heat will have to be converted into some form of energy that can either be used or given off at a fairly fast rate.

Fortunately this problem is half way towards being solved in the natural order of things. All warm objects are always giving out energy in a wave form known as radiant heat. On any night when the sky is clear, especially on a fine windless night when there is not a cloud in the sky—the sort of night on which the stars fairly crackle—you can

experience evidence that this radiation takes place and that it produces cooling. Take a stick, preferably pointed at the end, but a walking stick will do, and hold it above your head with your arm outstretched pointing to the sky and stand still. Presently you will feel a thin cold stream of air trickling down from the stick and over your wrist and down the sleeve of your up-raised arm.

Radiation is taking place from the end of the stick so that the ferrule loses heat. The cooled ferrule cools the surrounding air, which contracts and becomes heavier and trickles down the stick and, passing over the warmth of your wrist, is easily detected.

Of course, heat radiation takes place through a vacuum just as light, from which it differs only in wave length, comes from the filament in a vacuum electric light bulb. Radiant heat, therefore, will be given off by a warm object in space.

How can we help our spaceship to lose heat radiantly? By making it the right shape. Any warm surface gives off

radiant heat but sharp points do so more rapidly than do flat or rounded surfaces. So, we want no smooth cylinder with only a pointed nose—we want points all over. Maybe when the calories to be lost are calculated we shall find that our hull will have to be bristling with pointed rods so that if the sphere proves practical as a basic shape our ship will look like a giant sea urchin.

This, of course, does not claim to be a forecast of the exact shape of the spaceship. I have merely indicated some of the factors which will influence its design. There are as many others to consider—outward pressure in space—inward pressure in various possible atmospheres—expansion and contraction of surface on entering and leaving a warm planet and so on and so on. The one thing I am fairly certain about is that it will be a very different affair from a high speed aerial projectile.

I have made no mention of shape in relation to entering an atmosphere from space. That will be part of an article to appear shortly.

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FICTION

A book that does not really need a review has recently been put out by Sidgwick & Jackson (1 Tavistock Chambers, Bloomsbury Way, W.C.1), at 8s. 6d. This is *EXPEDITION TO EARTH*, by Arthur C. Clarke, which is the first collection of his short stories. It contains eleven stories of varying quality, some of them coming from way back when, and some of them recent enough to show Clarke at the present development of his writing powers. They are slow, rather plodding stories, but they do carry with them a credibility that is missing from the more brittle type of science fiction. As you read further into the book you become increasingly to believe that *this* is the real thing, largely stripped of glamour and excitement, not a lot of suspense; just the plain, straightforward way

that things will happen. It's quite good.

Jonathan Burke has a novel out from Museum Press (26 Old Brompton Road, S.W.7), at 7s. 6d., called *PATTERN OF SHADOWS*. This is a story set on a most unlikely kind of Mars, involving telepaths, amnesia, gangsters, big business men and more or less every gimmick that has ever been introduced into science fiction. As you can guess, the story has pace. The hero has been given new memories—his old ones have been “lost”—and a new name. He has no idea who he is and it would be a pity if we told you, because that is what the book is about. It is not by any means the best of Burke, but it can take its place among the general run of science fiction novels without too much hanging of the head. Though—as we would—we deplore the

unnecessary technical inaccuracies—such as no space-suits on Mars. This sort of thing cheapens science fiction and makes it a butt for pig-headed goats. (What monsters *they* must be!)

Such inexcusable lapses are very evident in a trio of juvenile books put out by Publicity Products (51a Rathbone Place, W.1) at 3s. 6d. each. Willy Ley is said to have been the technical advisor for two of them—STAND BY FOR MARS and DANGER IN DEEP SPACE—but, knowing that gentleman's scientific integrity, we fancy his advice may not have been taken. Still, if you are prepared to overlook the mistakes in science, as many people, quite legitimately, do, then you will probably consider these titles to be quite suitable for the younger fan.

STAND BY FOR MARS and DANGER IN DEEP SPACE are Tom Corbett, Space Cadet, stories by Carey Rockwell. The first tells us of the leading characters'—there are three boys—experiences at the Space Academy and of their first trip into space, which takes them to an airy Mars,

running with watery canals. The second title is concerned with the bringing to Earth of a satellite of an extra-systemic planet. Both stories have complex, action-filled plots, with all sorts of criminals, murders and suchlike to titivate the young mind. Though these stories are not far removed from the ordinary crime novel, they do manage to get over a picture of what *could* happen in space—if you like to look on the black side of things.

The third PP title is *RIP FOSTER RIDES THE GREY PLANET*, by Blake Savage. This is about the bringing to Earth of an asteroid made of thorium—precious stuff, of course. It's only a thousand yards in diameter, so all they have to do is let off an atom bomb on the rightside and the thing sails home. Somehow, though, a lot of fighting and surrendering and conquering gets caught up in the story and we become aware that you have to be tough to be a spaceman. Brains help, but are not essential.

All three books are American in origin, are illustrated very nicely and cost so little

that we confidently recommend you to buy all three. Certainly the average youngster will love them.

Lutterworths (4 Bouverie Street, E.C.4) are getting deeper into the science fiction act with two more juvenile titles, both at 6s. ADAM TROY, ASTROMAN, by M. E. Patchett, is the kind of thing that makes us want to cry. It happens quite often. Here we have a radioactive asteroid that breaks loose from the Belt—God knows why—and crashes into Earth—how could it possibly miss! Follows devastation and all is misery. Except for Adam Troy. Fine fellow that he is—"tall, slender and strong, with deep blue eyes in his brown face"—he is off to Mars in case things get too hot for comfort on Earth. There are odd jaunts on the Moon and Mars all tied up in some complex, rather vague way. Both the Moon and Mars, we are told, has "pockets" of air. On the Moon there is a blue jelly that is easily turned into water. There are also some very peculiar creatures on that pock-marked world, it is said—spiders and suchlike. Oh, well, no doubt the youngsters will lap it up!

The second Lutterworth title is THUNDERBOLT AND THE REBEL PLANET, by Hereward Ohlson, who also wrote *Thunderbolt of the Spaceways*. Thunderbolt, as you may have guessed, is another Spaceman. He pilots *Audacity II* in a snow white uniform, is good and kind and gentle with animals, and talks with broken glass in his mouth. His story is all about dog-men and a snake king.

WILLIAM AND THE MOON ROCKET, by Richmal Crompton (Newnes, Southampton Street, W.C.2, 8s. 6d.), is the title of the first story in this book. It is the only one connected with science fiction, but so what? It's a lovely book and William is just the same as ever. Buy it and have a rest from space heroes!

NON-FICTION

FLYING SAUCERS FROM MARS, by Cedric Allingham (Frederick Muller, 110 Fleet Street, E.C.4, 10s. 6d.) is one of those books that is either a gigantic hoax or is something of worldwide importance. And

nobody—*nobody*—can get up and say that it *is* a hoax, for that would be sheer prejudice and quite irrational. However much one may be startled by the account in this book of a meeting with a Martian, and however much one may *feel* that this is all a bit silly, there is no foundation whatsoever for such views. The logical mind must accept the possibility of its truth. That, certainly, leads to interesting cogitations.

Mr. Allingham claims that, while walking in Scotland, he saw a flying saucer land, watched its occupant get out and then had a short "conversation" with him—which established that the man was from Mars. One is reminded all the time of Adamski's piece in *The Flying Saucers Have Landed*, of course, but *here* the narrative is much more reasonable and credible. A lot of the book has nothing whatever to do with *this* saucer, but is all about other saucers and could well have been left out; only 40 pages out of 143 are relevant. Still, you read it and see what you think.

For the many science fiction fans who want to know the

origin of the Moon, a new piece of authoritative lore is now available. This is *THE MOON PUZZLE*, by N. O. Bergquist (Sidgwick & Jackson, 1 Tavistock Chambers, W.C.1, 16s.). The whole story is too big to go into here, but we will say that every aspect of this topic is explored with scientific detachment, every theory is carefully criticised. The conclusion is that a planetoid grazed the Earth in the distant past—and we must say the argument is most convincing. A highly recommended book.

YOUR TRIP INTO SPACE, by Lynn Poole, is put out by Lutterworths (4 Bouverie St., E.C.4) at 8s. 6d. It's American in origin, but none the worse for that. In simple, intelligent language, it deals with practically every aspect of space travel. It is quite well illustrated with clear diagrams, and should prove eminently suitable for any bright youngster. Recommended.

WORLDS IN SPACE, by Martin Caidin, is another of the very fine space-fact books put out by Sidgwick & Jackson. This one costs 17s. 6d. and is well worth it. Illustrated

with sixty-four plates, excellently drawn by Fred L. Wolff, it is a much more up-to-date account of the possibilities and potentialities of space flight than anything at the moment on the market. The very latest information has been incorporated into the text, which is smooth-flowing and attractive. Another very high recommendation to S & J for this. Science fiction owes a great deal to this firm for its constant flow of high quality fact space books. *WORLDS IN SPACE* should be on the shelves of all serious fans.

BY *SPACESHIP TO THE MOON* and *ROCKETS, JETS, GUIDED MISSILES AND SPACESHIPS* are two large-format books put out by Publicity Products (51a Rathbone Place, W.1) at 4s. 6d. each. They are both by Jack Coggins and Fletcher Pratt, and they originate from America. With somewhat juvenile covers, they are, nevertheless, suitable for quite a few adults, being maturely written and lavishly illustrated, accurate and interesting. Easily recommendable since they are so remarkably cheap.

Sometimes we receive a book that fills us with pure joy and makes up for the

frustration of having to review less happy publications. Such a pleasure-giving book is *A TREASURY OF SCIENCE*, edited by Harlow Shapley and published by Angus & Robertson (105 Great Russell Street, W.C.1) at 21s. This, you may think, is a high price, but, believe us, it isn't. Here we have 654 pages of really excellent writing by some eighty authors, many of them world-famous scientists. Each author contributes a piece that fits into a pattern, and the pattern is simply the matrix of science—its methods and aims and attitudes and progress; and its lure. Practically every science is dealt with. This book is for the intelligent, curious layman who likes to know what science is all about, and for the scientist who wants to know wider perspectives within the main discipline. The language is easy to follow, since all technicalities have been thrown to the winds; and it is throughout in a style both erudite and pleasing. Truly do the publishers claim that: "Here is a connected account of the modern man's universe, the substance of a hundred books." Do get it, please, for we recommend it most highly.

Similar in approach and quality is the *ENCYCLOPAEDIA FOR CHILDREN*, put out by Odhams (Long Acre, W.C.2) at 25s. This enormous book (12 inches by 9 inches, 384 pages) is simply crammed with full-colour illustrations that are some of the most excellent we have ever seen. They and the highly competent text cover every branch of knowledge in quite considerable detail, and in attractively modern style. If this is the kind of thing that children get these days, there seems little fun in growing up! Every parent who is concerned for his children's mental welfare *must* buy this book—even if it means a minor sacrifice for a week or two. And few parents will not derive hours of pleasure in looking at the 2,500 pictures in this really superb publication. Encyclopædias have a reputation for being dry-as-dust. This one gives the lie to it. Here, indeed, is a way to learn without tears. Buy it, everyone.

In a different sort of way, *PEARS CYCLOPAEDIA* is a very useful book. It is put out by A. & F. Pears, Ltd. (Isleworth, Middlesex) at 12s. 6d. Its thousand-odd pages of fine

print contain most of the answers that people are always wanting to know—and a lot more besides. This 63rd edition contains a new section, "The World of Science," which is surprisingly complete and accurate, dealing with all the major branches of science from the modern point of view. As a reference book that you have to *read* every time you refer to it, *PEARS CYCLOPAEDIA* is first-rate.

THE DEVELOPMENT OF THE GUIDED MISSILE, by Kenneth W. Gatland (Iliffe, Stamford Street, S.E.1, 15s.) is a saddening book. Excellently written, beautifully and lavishly illustrated, nicely produced, it is a perfect book of its type and subject. What makes us sad is that, necessarily, six of its nine chapters are concerned with devices for murdering people—bombs, shells, things like that. Of course, we can't blame the author for any of this, and we hasten to say that Mr. Gatland has produced a very highly recommendable book. It contains everything you want to know about guided missiles and tells the story in fluent, attractive prose. In places it tends toward the technical, but there is not so

much of this that you can't skip it without feeling that you're missing most of the book. Another essential book for serious fans.

Professor A. M. Low's 43rd book is THANKS TO INVENTORS, put out by Lutterworths (4 Bouverie Street, E.C.4) at 12s. 6d. This is another of those books that are said to be juvenile, but which must have much attraction for intelligent adults. Low, no mean inventor himself, covers a whole range of devices that play important parts in modern life, and does it in his incomparably "popular" style that maintains strict accuracy without becoming in the least pedantic or boring. A very nice book.

We find that those who are interested in space are usually attracted by the sea. Such will find a great deal of interest in THE ATLANTIC OCEAN, by F. George Kay, published by Museum Press (26 Old Brompton Road, S.W.7) at 18s. Mr. Kay delves interestingly into all facets of this mighty ocean, and tells his story with verve and enthusiasm. Reading it, one may come to think that the conquest of space will

not, from the human point of view, be so very different from the conquest of our own planet. A pleasant book for bedtime.

The mathematicians among you will be pleased to hear of the publication by English Universities Press (St. Paul's House, Warwick Square, E.C.4) of ADVANCED NATIONAL CERTIFICATE MATHEMATICS at 20s. This is the second volume and occurs in the "Technical College" series. It is written by J. Pedoe, Head of the mathematics department at Plymouth and Devonport Technical College. It and the first volume adequately cover the work required for the Advanced National Certificate and this second volume also covers the syllabus in statistics required for the London B.Sc. (Eng.) and B.Sc. (Chem. Eng.) degrees. One of the most interesting and useful points about the book is the provision in the section on Laplace Transform of an alternative method for solving linear differential equations with constant coefficients. This alternative is much simpler and more amenable to practical application than the old operator method. The whole

of the work is set out clearly and concisely and both author and publisher are to be congratulated on the excellent production.

A book that should prove of more than considerable interest to science fiction fans is *A SCIENTIST OF THE INVISIBLE*, by A. P. Shepherd, published by Hodder & Stoughton (Warwick Square, E.C.4) at 12s. 6d. This is about the life and teachings of Rudolf Steiner, the founder of the study of anthroposophy. The ideas and concepts in this book are so big and all-embracing that we could not do them justice here. All we can say is that anyone who is interested in beliefs that are the opposite of materialistic determinism and who wishes to read a scientific account of such beliefs, should buy this thought-provoking book.

MAN AND THE VERTEBRATES, by A. S. Romer, is published by Penguin (Harmondsworth, Middlesex) in two volumes at 3s. 6d. each. They form a most desirable addition to any biological library and should be regarded as essential reading for anyone concerned with evolution and man's place in

nature. From the biophysical point of view, the development of man is traced up through all the lower phyla in a clear and concise manner that makes many of the more complex concepts easy to understand.

MYSTICISM AND LOGIC is another Penguin book, costing 2s. This is a collection of essays by Bertrand Russell on all kinds of topics, but mainly concerned with science and philosophy. We recommend it highly for all who like to think.

NEW BIOLOGY NO. 17, yet another Penguin book at 2s., does not contain as many articles of interest to our readers as it usually does, though the paper on land-use in Africa contains ideas that would apply to the opening up of alien planets, and the article on monsters is most stimulating.

EVERYBODY'S BOOK OF ELECTRICITY, by R. B. Way, comes from Percival Marshall (19 Noel Street, W.1) at 3s. 6d. This is quite a delightful little book which really does cover an enormous amount of ground with respect to electrical matters. Through brief

consideration of fundamentals, the author works up to a clear exposition of modern electrical devices. Very good.

THE BOYS' BOOK OF AIRCRAFT, by Laurence C. Bagley, is put out by Blackie (16 William IV Street, W.C.2) at 3s. 6d. Boys aren't the only people who will derive pleasure from this collection of drawings and data on twenty-nine types of aircraft, including many foreign makes.

Our many photography-minded readers will be interested to know about four little publications. HINTS, TIPS AND GADGETS FOR THE AMATEUR PHOTOGRAPHER, is published by Fountain Press (46 Chancery Lane, W.C.2) at 8s. 6d. It is choc-full of all manner of devices that the home photographer can easily construct and which will be of great aid in his hobby. YOUR BOOK OF PHOTOGRAPHY WITH BASIC CAMERAS, by William P. Gott-

lieb, comes from Faber and Faber (24 Great Russell Street, W.C.1) at 5s. 6d. It deals with all the principles of taking good pictures with simple cameras and is extremely well illustrated with photographs showing the right and wrong ways. CAMERA TIPS FOR EVERYONE is another Fountain Press title, selling at 1s. 6d. In small compass, the book lays down all the bare essentials of photography from the purely practical point of view. It is well illustrated with pictures taken with box cameras. The AMATEUR PHOTOGRAPHER'S DIARY comes from Iliffe (Stamford Street, S.E.1) at 4s. 1d. in rexine, and 5s. 10d. in Morocco leather. In addition to the diary section, there are many departments for photographic notes and much very useful information in the form of tables and formulæ. No photographer should be without one of these slim, handy little diaries.

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FANZINES

BEM is produced by Mal Ashworth and Tom White, at 3 Vine Street, Cutler Heights, Bradford 4, Yorks., and costs 1s. 6d. for two issues, which are more or less quarterly. Issue No. 3 has a fine piece by Robert Bloch on an American Convention from the points of view of a professional and a fan. Archie Mercer and Vincent Clarke, Bob Shaw and several other notables are in with articles and stories, and this issue contains about one third readers' letters. BEM contains forty quite legible pages and seems well worth the price.

★

FANTASY TIMES is produced fortnightly by James V. Taurasi, Sr. The new address is P.O. Box 2331, Paterson 23, New Jersey, U.S.A. It costs 10 cents an issue or 12 issues for one dollar. No. 204 contains news and gossip about magazines, books, films, radio and TV, all mostly American

in origin. No. 205 has reports on the American Science Fiction Convention held at San Francisco in September last. Fancy dress seems to have enlivened the proceedings. There is also a report on a small convention held in Oklahoma and an advert. for one in New York—someone must have some convention headaches in the U.S.!

★

ANDROMEDA is published weekly by Pete Campbell, 60 Calgarth Road, Windermere, England, and costs 2½d. (5 cents) per copy, 35 issues for 7s. or one dollar. In the closely printed eight pages of No. 5 there is gossip, an editorial, fanzine reviews, letters, news and a "for sale" column; not too bad for 2½d. No. 6 is mostly a convention report.

★

CANADIAN FANDOM is edited and published by Gerald A.

Steward, 166 McRoberts Avenue, Toronto 10, Ontario, and costs 15 cents a copy or one dollar for eight copies. It consists of twenty-six clearly printed, large pages with a stiffish cover and is quite an impressive fanzine—some of the inside illustrations are very good, too. It contains stories and all the usual fanzine features, including some cartoons, all with a Canadian bias, of course. A very nice publication, which does honour to fan publishing.

★

i, the London fanzine, is edited by E. C. Tubb, A. Vincent Clarke and J. Stuart Mackenzie, and is published from 5 Hans Place, S.W.1. No. 2 has all the good points of No. 1 and is better still. There is a long Manchester Convention report from several fans (surely the report to end all reports? Although the stirred-up mud will probably start everyone off again!) The letters column is long; the two "religious" pieces are gems, and the Bloodshot supplement caused our loudest fanzine laugh for a long time. Normally i is 1s. 6d., but the next (Christmas) issue will be 2s., and is promised to be

something special. We're looking forward to it.

★

PHANTASMAGORIA is edited by Derek Pickles, 197 Cutler Heights Lane, Bradford 4, and by Stan Thomas of 22 Marshfield Place, Bradford 5. They do not have a subscription fee. If you want to receive PHANTASMAGORIA you must: a, write a letter of comment; b, send a fanzine; c, send a contribution (text, cartoons or money as a last resort). No. 2 to hand contains an editorial, a piece by Nigel Lindsay, another by Archie Mercer, letters and cartoons. The general effect is not very pretentious, but as it is meant to be a form of long letter, it is adequate.

★

Charles Lee Riddle, editor of *Peon*, has brought out a limited edition of 1953 CHECK-DEX—which is a complete listing of all the stories appearing in science fiction and fantasy magazines published in the United States during 1953. We don't know whether Charles has any copies for sale, but it might be worth writing to him. They cost 25 cents. His address is 108 Dunham Street, Norwich, Conn., U.S.A.

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OVERSEAS SECTION

N.Z. CLUB

I have been trying to start a S.F. Club here for some time but just cannot find sufficient fans, although I have advertised in our newspaper. The reason I want to raise interest is because of about seventeen bookshops in Christchurch, only three are still selling S.F. and I'm afraid these three will also stop selling S.F. Could you tell me if you know of any other S.F. Club in N.Z. Could you give me the name of anyone over there who could tell me just how a club should be run?

G. W. Sarchett, 2 Curries Road,
Hillsborough, Christchurch,
New Zealand.

Well, if publicity in Authentic will do any good, here it is. Sorry, but we don't know of any N.Z. Clubs off-hand. Your best bet on finding out how to run clubs is to write to the editors of various British fanzines, which are reviewed in Authentic.

THRIVING

I would like to thank you for the nice writeup you gave us for our publications, *Etherline* and *Question Mark*. We have had quite a few inquiries because of it. There is no possibility of *E* or *Q.M.* folding for at least a couple of years. We can get all the news we want for *Etherline* with books, mags, reviews and club reports, etcetera, but material for *Q.M.* is not so easy to get, as we are not looking for the general run of articles, but something more serious, like factual stuff on space travel. But fiction of any type is welcome. Well almost any type. What we would like to get is a regular correspondent in England for *Etherline*, who could supply us with local news of fandom, and anything at all in the way of articles, stories and poems for *Q.M.*
Mervyn R. Binns, 4 Myrtle Grove,
Preston N 18, Victoria, Australia.

Glad to hear the thriving news, Mervyn. Nothing sickens us more than hearing of a fanzine dying, usually through lack of initiative or through personal squabbles. We think this bit of publicity will bring you more offers of correspondents than you want! Keep in touch.

SAVIOURS

I am not a fiction fan, a science fan nor a science fiction fan; but I am an enthusiast for life itself, and I find that the subject matter of good S.F. comes closest to my experience with life and reality—closer than either the scientists on the one hand and the theologians, psychologists, philosophers, etc., on the other. The story *Saviour*, by Bryan Berry, is, in my opinion, and with a little modification and interpretation, little less than a statement of fact. There *are* people like Pat Vane and his girl friend. This is not surprising since all our deepest instincts—the psychophysical wonders of the universe—of both race and self preservation are seriously activated by the immediate threat of H-bomb war. This is fact, not fiction.

The set of circumstances is ripe for saviours, and they would certainly come from and in reaction to conventional, though intelligent, parents with fairly strong wills. Saviours must be, by the very meaning of the word, opposed to the accepted thought of the day. Such saviours are most certainly concerned with the group conscience—the race preservation instinct. Bryan Berry is himself activated—which is why, beyond all personal considerations, he wrote the story at this time, and also why the story is psychologically accurate. The entry of telepathy into his story comes from treating a real psychological fact as fiction. It is symbolic of the "telepathic" contact with his own unconscious saviour—unless he did it deliberately and is using *Authentic* to carry his message. Whether or not this is the case, the telepathic symbols will be recognised by the unconscious of

some suitable readers and will aid in the activation of the instinct. I was very pleased to see that the note at the climax was upon influencing other people's thinking, and not upon the old power bug of mind over matter. Perhaps these symbols will eventually do much more good by "speaking" to the unconscious saviour in others than would hundreds of serious letters and sociological articles. I do not know. There may thus be a certain "telepathic" contact with the group conscience which makes Pat Vane Bryan Berry himself within certain limits; aided of course by *Authentic*, in which case *Authentic* is a happy choice of name, because we are dealing, not with fiction, but with the serious use of fiction, much as Jesus used parables. Perhaps the choice of Bryan Berry's *Saviour* has a deeper root than simple professional publication. Perhaps that itself is just the difference between good and bad S.F. I, personally, see no reason why good entertainment should not add a cubit or so to our stature. Perhaps, on this ship flying through space we call the Earth, saviours are nothing more than emergency repair crews. R. Carvier, 39 Falcon Street, Crow's Nest, Sydney, Australia.

Your letter speaks for itself, Mr. Carvier. We were very pleased to receive it. We only hope it is not misunderstood by some readers.

FILM?

I feel I must congratulate you for including *Death Deferred* by E. C. Tubb in *Authentic* No. 45. It is a pity that this story could not be made into a film, as I feel it would make a forceful impact on all who viewed it, and perhaps act as a

AUTHENTIC SCIENCE FICTION

powerful medium in outlawing atomic warfare with all its attendant horrors. Mr. Tubb deserves the highest praise for what I consider to be a masterpiece of writing, and I intend to recommend it to my many friends. I would be glad to hear from readers in all parts of the world, and will endeavour to answer all correspondence. I am particularly keen to obtain data on Flying Saucers—can anyone help? Denis W. G. Saunders, 11 Fifeshire Street, Iakapuna P.2, Auckland, New Zealand.

Well, Denis, stories from Authentic have been broadcast and televised, and one of them is now being considered with a view to filming. So maybe you are not so far out in your ideas. Tubb is gratified, anyway. And so are we. Thanks.

KIND

I have just finished reading an issue of *Authentic*. The stories were very good, but I must confess that the one thing I will always remember about that particular issue is the letter in the back of the magazine from E.K.B., Johannesburg, South Africa, and Fred van A., Johannesburg, South Africa. Needless to say I was shocked. Well to make a long story short. Will you please send me their complete names and addresses so that I can send them my magazines as I finish them. I don't think they will get into trouble unless the government there censors the mail. Richard M. Chiappetta, 363 Garfield Street, Fairview 4, New Jersey.

Kind of you, Richard, and we mightily appreciate your gesture as,

no doubt, do E.K.B. and Fred van A. But the position has been clarified recently, and it appears that there is no ban on subscription to Authentic in South Africa. Don't let go of your attitude to life, will you, Richard? Too few have it.

DISMAY

I view with dismay in your latest issue the statement that you are considering publishing short stories only.

R. F. Short, 14 Aquila Close, St. Helier, Jersey, C.I.

We made no such statement! We simply said that, if nobody kicked, we would now and then give you shorts. You are kicking, we presume?

NO GRIPES!

Authentic's growing (and improving), and it's good to see it grow. *Authentic* is a good magazine and it's made wonderful progress. Davis' series of covers are really good. If you print this don't do what you did with my last letter and cut out all the gripes, leaving only the bouquets.

D. R. Jefferson, 41 Mary Street, Longueville, Sydney, Australia.

Yah! That's exactly what we have done!

HOME SECTION

SELECTIVITY

The articles on logic I found an interesting and non-technical exposition of a subject which is unjustly neglected by people interested in other branches of philosophy. The author is to be congratulated and encouraged. John

Stuart Mill managed to say something about a remarkable man, while passing over his political philosophy—a surprising omission, I should think, since it is surely this which keeps his memory green among non-philosophers. Among the stories, the first place goes to *Servant Problem*. The idea is original, the style crisp and humorous. It is a pity that the last paragraph contains too many words. We are still reading after we have seen the joke. This is, however, a small point and it does not make the story any the less good. The second place I would award to *Recoil* and *Last Journey*. Both stories are competent, if not inspired, rehashes of themes used before. Neither of them, I think, should have been included. They are not without merit, but your magazine has printed better.

The last place I reserve for the long novel *The Tabarni Document*. I found it unreal and lifeless, and here I am puzzled. Presumably you, as Editor, thought it meritorious. I confess, however, that this story and all those resembling it, never catch my interest. Neither of the two main characters is brought to life; both remain two-dimensional; and the mysterious Tabarni, after showing himself, is ignored during the denouement. The beginning and end of this story are linked by a similarity of language, but I have found no logical connection between them. Either prologue or epilogue could have been omitted. If this is right, then *The Tabarni Document* is not a good story. But you think it is a good story, or you would not have printed it. The third term of this syllogism has not yet been vouchsafed me, but I suspect that it points out that you

and I have different principles of selection. I have told you mine; will you tell me yours?

J. P. C. Toalster, 2 Stanley Road,
Lindley, Huddersfield.

Sure we will. We choose the kind of stories we think the majority of readers will like. Sometimes we try a story about which we're doubtful, just to see what you all say, and to get a better idea of what you like. Sometimes, too, we make mistakes!

NO GRID

In the No. 50 issue of A.S.F. I noticed one error in the story *The Hidden Treasure of Kalin*, by E. C. Tubb. The error was "—the intermediate frequency amplifier, a diode valve, is incorporated in the circuits." This statement is something that is impossible. To have any amplification at all in any radio circuit, it is necessary to have at least one grid in a valve, but the diode does not have any grids. This is the first time I have written a letter pointing out an error in a story since I started taking *Authentic* twenty issues ago, because it is the first time I have been really stirred to write. On the whole I find *Authentic* a very good magazine, well-produced, with the correct mixture of fact and fiction to keep the magazine interesting from cover to cover. Keep the magazine going as it is now and I feel sure you will spread further than ever round the world.

2599875 S.A.C. Candlin,
R.A.F. Transmitters, Lund,
Nr. Driffeld, E. Yorks.

Well, you ought to know, Mr. Candlin! Thanks for pointing out the mistake.

COMPLAINT

I desire to bring to your notice a statement made on page 135 of your magazine *Authentic Science Fiction*, Issue 51.

The statement refers to myself and two friends, Mr. Eric Jones of Cheltenham, and Mr. Terry Jeeves of Sheffield.

I quote . . . "which is also to be expected from these three misfits in fandom."

The comment may appear to be somewhat esoteric to you. It is, never-the-less, slanderous in nature and unfounded in fact. I have consulted my Solicitor and he informs me that I have good grounds for a libel suit, should I choose to take action. I would, therefore, before taking further action, request that you publish in the above mentioned magazine an early apologia. Your prompt reply would be appreciated. Yours faithfully,
Eric Bentcliffe, 47 Alldis Street,
Great Moor, Stockport.

Sorry if we've made you wild, Eric. Naturally, we are not childish enough to make derogatory statements about you. We called you misfits because of the trouble over the fanzine SPACE TIMES from which you were asked to resign, and because of your triple resignations from the Supermancon Committee and the Manchester Group. Some people we know are proud of being misfits. Thought you might be, too. Certainly, nobody is going to regard you with ridicule because of it.

GRAPHIC

I have enclosed with this letter a graph, showing in my opinion the progress of British science fiction magazines. You will see that *Authentic* has rated top since its 35th issue. After a very insignificant

and shaky start, *Authentic* has now become the most mature and adult science fiction magazine in this country. The balance of stories, features and science articles is excellent. Also *Authentic* does not waste its valuable reading space with interior illos.

Jack C. Rowden, 18 Millards Hill, Wilton, Midsomer Norton, Bath, Somerset.

Oh, dear! Wasting valuable space? You don't think we've done that with our new beautiful supplement, do you, Jack? Thanks for the praise, though.

MIDDLE-AGE DREAD

I can't judge for your younger public, of course, but as one in middle age, I know that I don't want Plato and Aristotle dished up in a half-baked form giving us authors' ideas as to how the future world will manage its affairs and how to run it. I'd much prefer to read Plato and Aristotle themselves. I think there is a danger when we get away from simplicity into woolly complexity. What I'm looking for is a simple, straightforward story of adventure and struggle, in some world of the future where the author's imagination can have full rein, not necessarily only of the space opera type. I haven't yet read the current issue. I quite liked the *Tabarni Experiment*. I don't think we want any sex and I don't think we want humour, except in small doses; science and humour hardly seem to mix, except when subtly done.

John W. Fisher, Merthyr House, Exminster, Nr. Exeter, S. Devon.

What can we say to this?—except why on earth do you read Authentic if it's so bad, Mr. Fisher?

THE AUTHENTIC ALPHABET POLL

Please read the Editorial before looking at this page

Below are twenty-five suggestions for the improvement of *Authentic*. Please tick those with which you agree, and do nothing about those with which you disagree. For example, if you think that we now carry the right balance of fiction and non-fiction you will not tick either c or d. We shall then know what you mean. If you think *Authentic* can't be improved, then don't tick anything!

Authentic could be improved by having:

- | | |
|---|---------------------------------------|
| a Fewer, longer stories..... | o More psychological stories..... |
| b More, shorter stories..... | p More sociological stories..... |
| c More fiction..... | q More Projectiles..... |
| d More non-fiction..... | r Less Projectiles..... |
| e More illustrations..... | s Some kind of puzzle feature..... |
| f Less illustrations..... | t Author biographies..... |
| g Serials..... | u Story ratings..... |
| h More science in the stories..... | v More stories by.....* |
| i Articles on the elements of various sciences..... | w More American stories..... |
| j Single columns..... | x Reprints of "classics"..... |
| k narrower margins..... | y A "sales and wants" section..... |
| l Less science in the stories..... | z A "questions answered" section..... |
| m More space stories..... | |
| n More time travel stories..... | |

* insert here the name of any one author who has appeared in *Authentic*.

Now list here the letters you have ticked, in what you consider is their order of importance.....

If you have an additional suggestion, make it here



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M.S., Chingford.

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H.M., Dumfriesshire, Scotland

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G.A.S., Ossett, Yorks

Dear Sirs,

I am very pleased with my APAL. I have been much better in health since using it. It certainly takes away the longing for a smoke. Thanking you very much,

Mrs. C.A.H., Coventry

Dear Sirs,

Fifty cigarettes a day for over twenty years is pretty good going and nobody would have me believe that I could ever give it up. Your APAL arrived four and a half weeks ago and I am delighted to say that I have not smoked since.

F.F., Hertford.

Dear Sirs,

I bought an APAL from you nearly eighteen months ago, and it did for me all that you said it would. I have not smoked for seventeen months, and have no desire at all to do so.

G.H., Marham, Norfolk

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